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Excavations at Ur, 1929-30

By C. LEONARD WOOLLEY, Litt.D.

[Read 15th May 1930]

THE eighth season of the Joint Expedition of the British Museum and of the Museum of the University of Pennsylvania started at Ur on 1st November 1929, and ended on 19th March 1930. The staff consisted of my wife, who as usual was responsible for the type-drawings of objects, the planning of the cemetery, and for a share in the field-work; Mr. M. E. L. Mallowan, general archaeological assistant; the Rev. E. Burrows, S.J., epigraphist; and Mr. A. S. Whitburn, architect. Hamoudi was, as always, head foreman, with his sons, Yahia, Ibrahim, and Alawi acting under him; owing to the fact that work was always going on in at least two spots fairly far apart, greater responsibility than usual was thrown on the younger foremen, who answered admirably to the demands on them; Yahia combined this work with that of staff photographer. The number of men employed varied slightly at different times, but was always over 200 and for most of the season kept at about 240, a number well in excess of the average of past seasons; the amount of work done was correspondingly great. I have to thank the Royal Air Force in Iraq for help of many sorts and not least for an air photograph of the site (pl. xxviii) taken at the close of the season and of much value for purposes of comparison with earlier photographs; Lt.-Colonel Tainsh, Director of the Iraq Railways, for facilities enabling me to undertake a short experimental dig at Meraijib, a prehistoric site some ten miles south of Ur; and the Director of Antiquities, Iraq, for his help in this Meraijib work and to the Expedition in general. I must also acknowledge my indebtedness to the staff of the British Museum

Laboratory, where the work of restoring and cleaning was as usual carried out, and in particular to Mr. E. C. Padgham for his success with the silver objects; Mr. Evan Watkin of the Department of Egyptian Antiquities undertook the mending of the stone vases, and for the mending of the pottery the services of Mrs. F. W. Bard were secured.

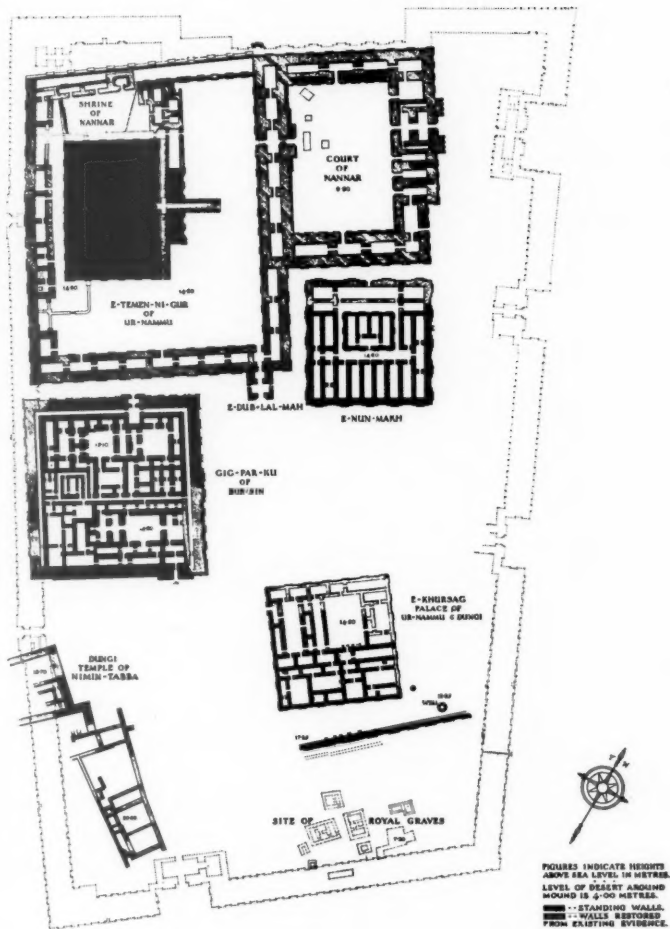
Three distinct tasks were envisaged by our programme for the winter, all of which were successfully carried out: (a) The continuation of the excavation of the royal cemetery resulted in the completion of the work; the limits of the graveyard were found, and though a certain number of graves, principally of the late period, undoubtedly remain, they would not repay the cost of excavation. The clearing of the cemetery led to deeper digging, and in two places virgin soil was encountered; between this and the bottom level of the royal graveyard were found graves of a totally different character and date, illustrating a period of history hitherto scarcely represented at Ur. (b) The further investigation of the Flood stratum occupied a large gang of men for the greater part of the season, and here again work was carried down to virgin soil. (c) The tracing of the walls of the city was completed. This involved the excavation of three temple sites and of a number of houses in addition to the work on the wall itself.

Advantage was taken of Mr. Whitburn's presence to work out on the spot the ground-plans of the Temenos of Ur at different periods. The material for these plans had, of course, been amassed during the past seven years, but to sort and combine that material a certain amount of fresh survey work was required and doubtful points had to be re-examined. The Third Dynasty plan (pl. xxix) has yet to be completed by the excavation of an important building of Bur-Sin found this season on the outskirts of the cemetery area: that of the Larsa period (pl. xxx) is probably final and those of the Kassite and Neo-Babylonian periods (pls. xxxi, xxxii) include everything that now remains of the buildings of those dates. The series is of the greatest interest as showing the modifications and rebuildings of the principal temples between 2300 and 530 B.C.

THE WORK ON THE CITY WALLS (pl. xxxiii).

The general character of the defences had been ascertained by partial digging carried out in the season 1928-9 and described in the *Antiq. Journ.* for October 1929. The principal new discovery of this year was that the ramparts which form the base

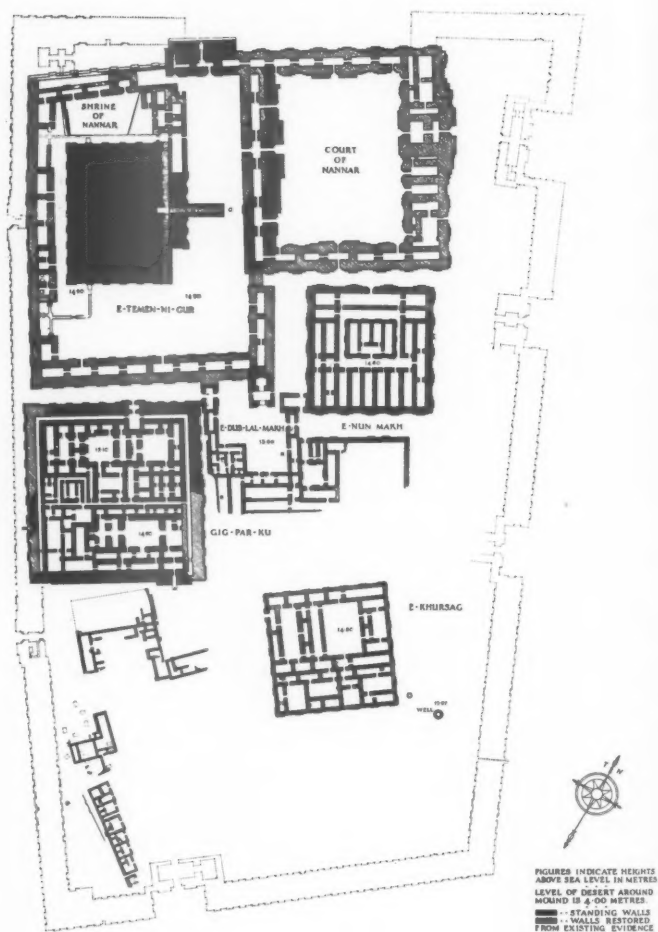
E-GISH-SHIR-GAL
THE TEMENOS OF UR
THIRD DYNASTY PERIOD. C. 2500 B.C.



AGONYTUSSEN, 1918
BELT, JAN 1930

E-GISH-SHIR-GAL
THE TEMENOS OF UR
LARS A PERIOD - C. 2000. B.C.

Nº 3



AS WHITBURN AR/24
BELT - JAN 1950

SCALE OF METRES
0 10 20 30 40 50 60 70 80 90 100

F. G. NEWTON
A. B. WHITBURN AR/24
C. S. WOOLLEY, *Rev. AR 19.2*
MENS BY BELT - 1952 - 1950

of the wall proper served also as the revetment of a canal or river bank. Along the west side of the city ran the Euphrates; canals along the other sides virtually transformed the site into an island; another canal ran through the heart of the city.

The rampart of mud brick, to judge by the measurements and character of the bricks in it, dated from the Third Dynasty of Ur and was probably the work of Ur-Engur (Ur-Nammu); this is confirmed by the fact that a building of Bur-Sin his grandson stands actually on the rampart, which must have been already standing. It was, in places, re-faced several times at later dates, but seems to have been little altered up to the Kassite period, and even in Neo-Babylonian times its general line remained much the same. The rampart appears to have been about eight metres high and varied in width (at its base) from 25.00 to 34.00 metres; its front face sloped at an angle of about fifty degrees, forming the canal or river bank; its back face rose only some metre and a half above the terrace on which the town stood; to this terrace the rampart served as a retaining-wall. Of the wall of burnt brick which Ur-Engur built along the top of the rampart (as is known from inscribed bricks found re-used at various points inside the town), not a vestige remained anywhere. What did survive were public or private buildings, mostly of the Larsa period, which were aligned along the top of the rampart, their outer walls joined up so as to make a continuous line of defence. For the most part these buildings, to judge by their scanty remains, were set well back, leaving a broad flat promenade between the wall line and the edge of the sloped revetment, which would be an excellent manœuvring-ground for defending troops. At intervals, though with no regularity of system, the buildings projected forward, forming salients almost flush with the top of the slope, and in one case at least stepped well down it; where this occurred the lower part of the building was filled in solid with earth as if for the foundations of a tower.

A high line of mud-brick construction with water or low ground all along one side of it was bound to suffer severely from weather, and most of the rampart has been denuded into a shapeless mound whose present face slopes gently and irregularly back from the canal edge to the extreme back of the brickwork; its whole front and top have vanished, and with the top have gone whatever buildings stood on it. To lay bare the whole of this would have been a task as futile as it would have been costly, for in most places there was nothing to find. The method adopted was to make cuts at intervals across the

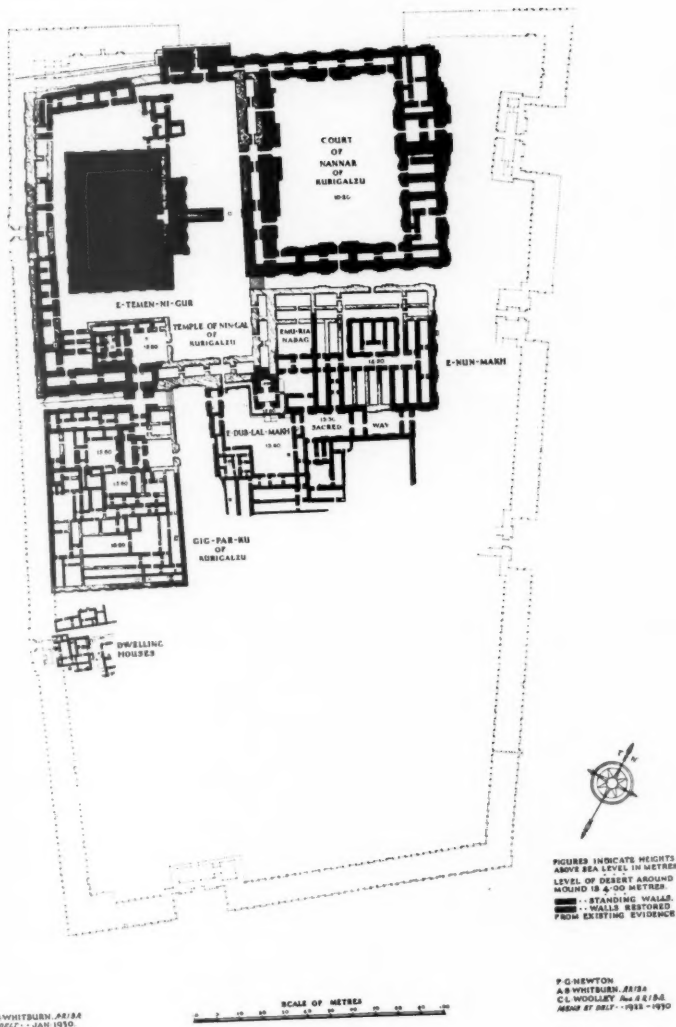
supposed line of the wall in order to verify the existence of the mud-brick rampart; if any of the true face was found, this of course gave the exact line, and where only the core survived the line was at any rate approximate. Any buildings found on the wall-top were thoroughly excavated, and where the wall was difficult to follow, work was carried farther 'inland' until, if possible, buildings were reached whose frontage might be assumed to run parallel with the direction of the wall.

The best-preserved part of the defences was on the east side of the town. Here the rampart still stands to its full height, and on it are the houses which formed the wall proper, their burnt brickwork surviving to several courses above floor-level. Brick stamps would date the houses in the reign of Sin-idinam of Larsa. To the south of the main block of private houses there projects a very massively built fort, undated by inscriptions but certainly of the Larsa period, lying on the top of the rampart but separated from the wall line by a narrow space. Here the rampart widened out and had supported an important building, the lower part of which consisted of a solid mud-brick terrace faced with burnt bricks front and back. Of its interior walls nothing remained, but an elaborate gateway approach of Kuri-Galzu and heavy mud-brick foundations of a Neo-Babylonian fortress showed that whatever had stood here was an important element in the city's defences.

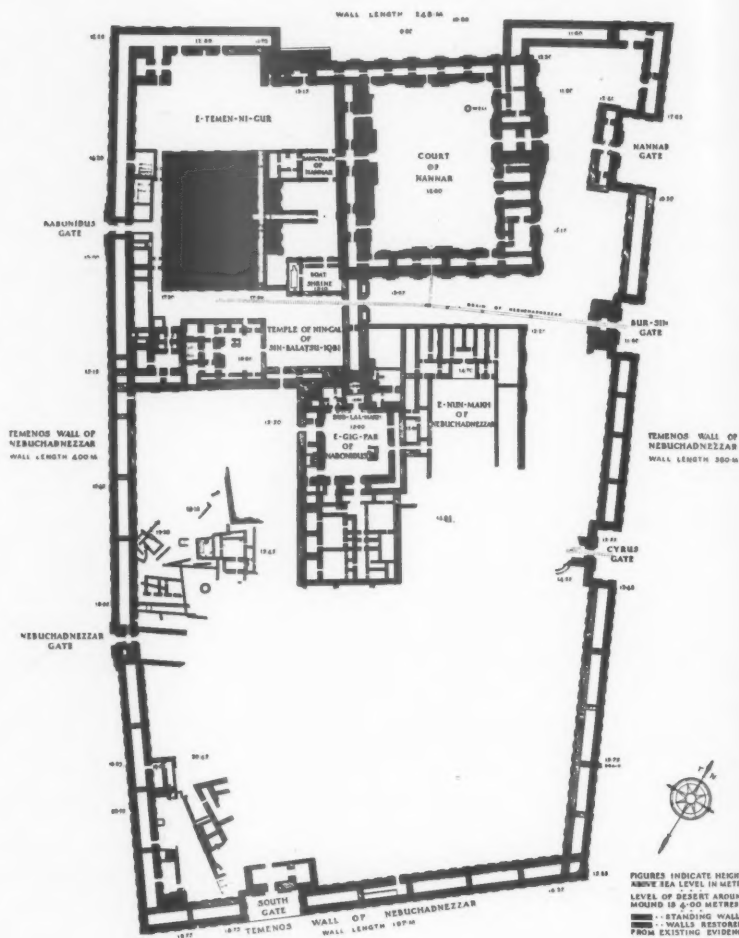
On the west side of the city there was a harbour, connected with the Euphrates and lying inside the wall line. An earth-work topped by a wall of mud-brick carried on the line of the rampart proper and formed the mole enclosing the harbour. At the north end this had been strengthened by a *kisu*, a solid cube of mud-brick work built up against its outer face at a later period, and also at a later period the harbour entrance had been blocked with mud-brick work; indeed the entrance was most difficult to find, but the discovery that at a certain point the bricks were of a slightly different size and had been piled in carelessly instead of being truly laid did finally enable us to distinguish the blocking from the original wall. The high terrace of the town sloped down very steeply to the harbour and clearly defined its area and shape, though cuts were made to show the exact line; a cut at the back of the harbour was taken down through muddy sediment to bottom level and exposed the burnt-brick footings of the mud-brick quay wall.

At the north end of the city there was a second harbour, the greater part of which could have been planned from surface indications, the low dark mounds of the moles being quite dis-

E-GISH-SHIR-GAL
THE TEMENOS OF UR
KASSITE PERIOD C. 1400-B.C.

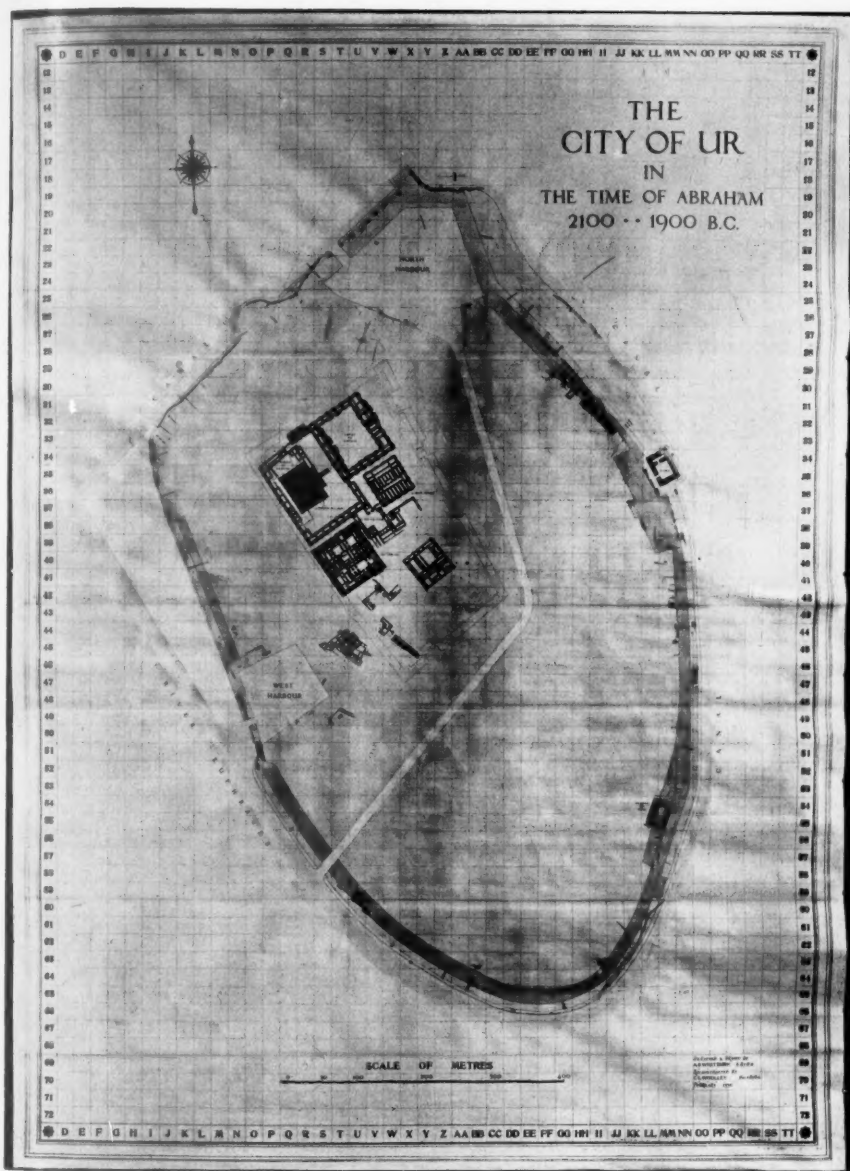


E-GISH-SHIR-GAL
THE TEMENOS OF UR
NEO-BABYLONIAN PERIOD .C. 550-B.C.

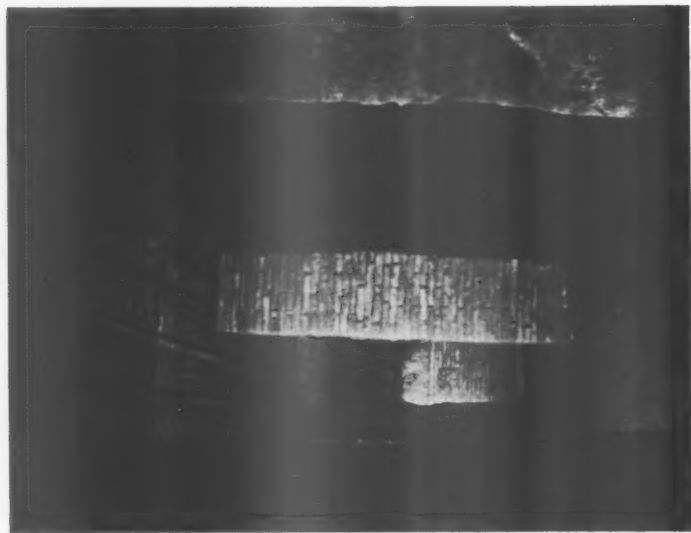


AS WHITSURN, 1918
DEL. - JAN 1930

P.G. HEWTON
AS WHITSURN, 1918
CL. WOOLLEY, 1918
REVIS. ET DEL. - 1953 - 1950



General Plan of the Town



a. The pronaos with its central pillar: in the background, the sanctuary and part of the brick altar



b. The entrance passage

The Harbour Temple

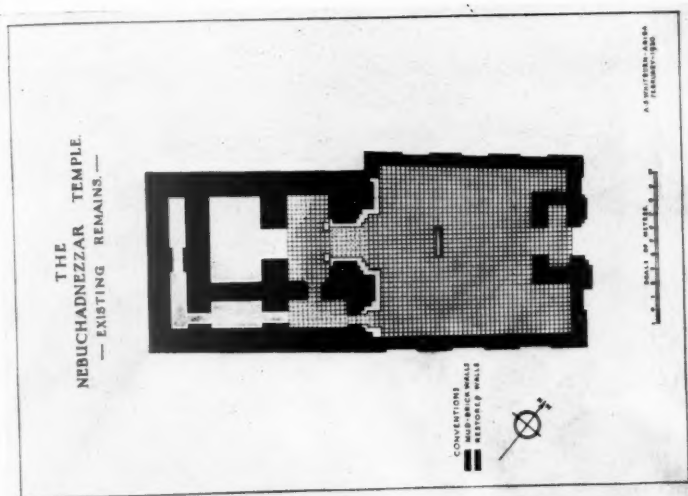
tinct; however, cuts were made across these and the outer face followed for some distance. Here again the enclosing line consisted of a mud-brick wall (of which not much survived) built along the top of an earthwork; the latter was of rubbish thickly revetted with mud containing much broken pottery. The eastern mole ran along a spit of land which extended for some distance to the outside, that is to the east, of it; the canal lay beyond this, leaving a flat level strip between it and the rampart, which it only touched by the angle of the eastern fort. Possibly the water originally washed the foot of the defences all along and had merely retreated; at one point we were able to distinguish in its silted-up bed another bank of what must have been an insignificant water-channel taking the place of the old navigable canal. I should remark that only one bank of the canal was traced by us, that nearest to the town; the width of its bed and what stood on its farther bank remain unknown.

Along the line of the wall there was found a number of graves of the Persian period underlying the floors of houses which had themselves entirely disappeared. They consisted of terra-cotta coffins, bath-shaped with one square and one rounded end, in which were bodies sharply contracted, the length of the coffin little exceeding three feet. In these were found many glazed pottery vessels, unglazed bowls very beautifully turned and often of egg-shell thinness, beads of stone and glass paste or glaze, bronze fibulae, silver ear-rings and finger-rings, and one extremely fine silver bowl decorated with fluting and chased work (pl. xxxvi, *a*); this unique piece was supposed to be bronze, so thickly was it covered with cuprous oxide, and it was only after prolonged chemical treatment that its real nature was discovered; the same is true of three finger-rings, the preservation of which is no less remarkable than that of the bowl.

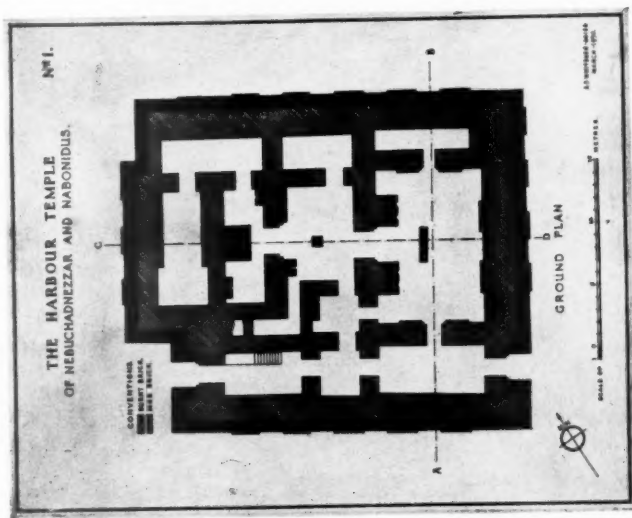
The private houses surviving on the wall-line were almost all of the Larsa period and presented few features of interest; below the floors were graves, some of which produced pottery typical of the period, but little else. The description of these must stand over for the final publication of the Expedition. In this preliminary report it is only possible to deal with the more important buildings whose excavation was incidental to the tracing of the defences.

In the last week of the season we found and excavated a large temple lying in the corner of the North Harbour. Its site was marked by a low mound which had obviously been disturbed by seekers after treasure, and a few scattered bricks bearing the stamp of Nabonidus showed that the buried building was of

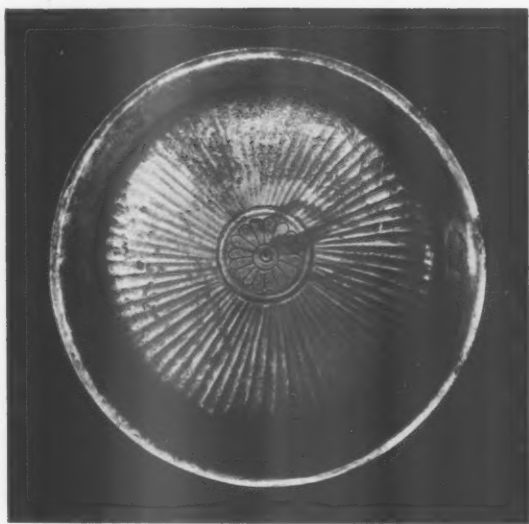
late date. As it seemed to be important for defining the exact limits of the harbour, we decided to clear it, and were astonished to discover here the best-preserved of all the ruins of Ur. The temple (pl. xxxv) is constructed in mud brick with a facing of burnt brick to the outer walls and certain interior details also in burnt brick; the walls are standing to a height of twenty feet, and on them the mud plaster and even much of the white-wash survive. In order to protect it from re-burial by the sandstorms of the summer months it was covered with a temporary roof, which gives to it a striking air of completeness (pl. xxxiv). The temple stood close to the water or, more probably, on ground actually reclaimed from the harbour. It was founded by Nebuchadnezzar (*c.* 600 B.C.) and was restored some seventy years later by Nabonidus. It would appear that the low-lying site was damp, for Nabonidus filled in the whole building with clean soil to a depth of two metres or more and laid a new floor over this; he added certain burnt-brick features and presumably made an increase in the wall-height corresponding to the rise in floor-level. Along one side of the building runs a corridor with a doorway at either end; side doors lead from it into the temple proper. This consists of outer court, pronaos and sanctuary, with a long 'oracle-chamber' behind the sanctuary and service chambers down the NE. side, balancing the corridor on the SW. The great altar in the sanctuary, set in a shallow niche, is of burnt brick, and in the sanctuary and against walls in the pronaos and in the outer court there are groups of burnt-brick 'pilasters' which seem to be the cores for wood-panelling; their purpose is unknown. Two other features in burnt brick, one in the pronaos and one in the court, call for special mention. The first is a square pillar, the second a length of narrow walling. In other Neo-Babylonian temples at Ur, e.g. in that which will be described next in this report, precisely the same features have been found, but as there were never more than two or three courses of brickwork left standing above pavement-level, their real character was disguised. I had supposed that the square block in the pronaos was an altar and the narrow block in front of the pronaos door was a 'table of offerings', as it certainly was in the Larsa-period temple of Nin-Gal, where the bitumen top of the table was preserved. But in the Harbour Temple now under discussion both these structures were found standing to the full existing height of the walls. There can be no doubt that in the centre of the pronaos we have a pillar supporting the flat roof, a point of considerable importance for the architectural history of the late period. The



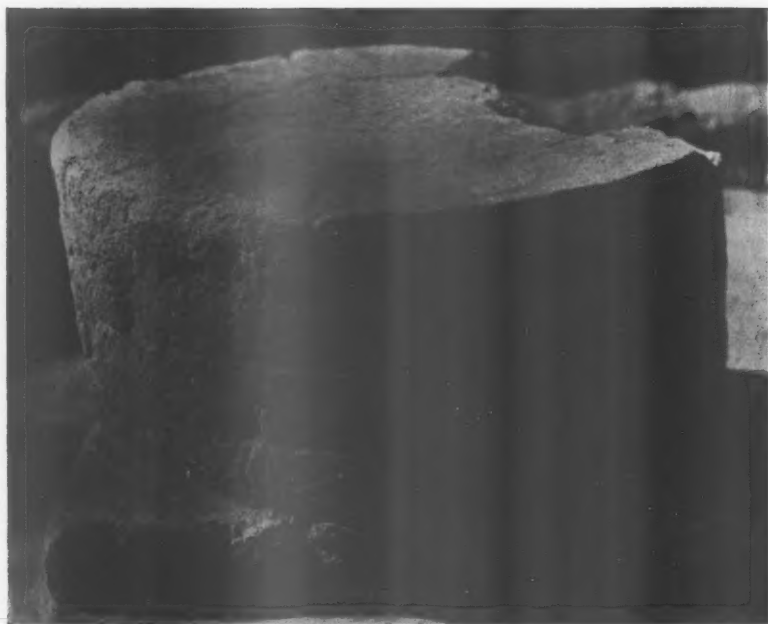
b



a



a. Silver bowl of Persian Period
(under side)



b. Mud-brick column in a temple of the time of the Third Dynasty of Ur

1
wall in the court is not so easy to explain; it is a screen which effectually masks the view of the sanctuary, and while it too may have performed some structural function it looks more as if it were intended for a screen, nor is it likely that there was any roof over the court requiring support. Another feature of interest is the staircase in the lateral passage. This was an addition by Nabonidus and does not seem to have any counterpart in the earlier building; it is built of mud brick only. The stairs run up from the corridor, turn over the wall of the temple proper, and were carried on in wood over a narrow passage with a right-angled turn at its end. They must have led to a gallery or chamber above the entrance to the sanctuary and perhaps extending over the sanctuary itself, and suggest something in the nature of the medieval rood-loft. I do not know of any parallel to this elsewhere.

No inscriptions were found in the temple giving its name or that of the deity to whom it was dedicated; it is possible that further research next season may throw light upon the question. Last winter there was only time for the excavation and roofing of the building.

At the south end of the town, just inside the fortifications, another temple built by Nebuchadnezzar was found; not particularly interesting in itself, it acquired interest from the method of its discovery, which was one of the lucky accidents of archaeological work. The walls, all of mud brick, had been destroyed down to floor-level, and at the sanctuary end even the burnt bricks of the pavement had gone, leaving only the substratum of mud bricks; these scanty remains lay immediately below the surface sand, and when the men scraped the sand away only a mud-brick level was visible. A workman, rather smarter than the rest, noticed that the bricks were not uniform in colour, some being reddish and some grey, and that the patch of greyer bricks at which he was working began to take definite shape; then that between grey bricks and red there was a line of white about as thick as stout paper. Actually the red bricks were pavement foundation, the grey were walls, and the white was the whitewash which, applied to the surface of the upper part of the wall, now destroyed, had trickled down between wall and floor. On such evidence we were able to work out the complete ground-plan of the temple (pl. xxxv), the only doubtful point being the precise width of the niche in the 'oracle-chamber'. The remains of the building had to be removed for the investigation of earlier ruins beneath it, and the foundations encountered in the process proved the accuracy of the

plan. It also became clear that the courtyard and the sanctuary were constructed independently (the foundations of the latter went down much more deeply) and perhaps at different times; since the pavement which spread over sanctuary and courtyard alike was the work of Nebuchadnezzar, the latter at any rate must be assigned to him, while possibly his work on the sanctuary was rather one of restoration than construction, and its foundation may have been due to an earlier ruler. If that were so we could on the strength of brick measurements reasonably attribute it to Sinbalatsu-iqbi, the Assyrian governor of fifty years before. No dedication-inscriptions were discovered.

Lying partly underneath the ruins of the Neo-Babylonian temple but extending well beyond it to the top of the city rampart were the superimposed remains of four other temples. Of these one was undoubtedly Kassite, one was of the Larsa period added to and repaired in some intermediate age, and the lowest must belong approximately to the Third Dynasty of Ur. The excavation of the site was not completed by the end of the season and the publication of the plans must be deferred until more digging has been done; up to the present we know nothing as to the authorship or dedication of the successive buildings. In the Larsa level there was found a small and much damaged limestone head of a god; originally of fine workmanship it was chiefly remarkable for the manner in which the whiskers were represented. In the lowest building, that assigned to the Third Dynasty of Ur, of which only a very small part has as yet been laid bare, a very interesting discovery was made, that of the lower part of a column built of segmentally moulded mud bricks, eight of which formed a ring round a central circular brick (pl. xxxvi, *b*). For the history of architecture this is a document of first-class importance. In the minds of archaeologists there has been an extraordinary prejudice, reflected in books of architecture, to the effect that the column was not known in Mesopotamia; any building with columns was assigned *ex hypothesi* to the Classical period. A columnar building at Nippur which the excavator judged to be Kassite (c. 1400 B.C.) was ruled out as Parthian; columns at Babylon were attributed to the Greek period; at Tello a composite column of burnt brick was found which undoubtedly belonged to about 2400 B.C., but it was held to be a column-shaped base, not a column. Dr. Hall, and later the Joint Expedition, at al-'Ubaid found columns of wood overlaid with copper or mosaic and dated to 3100 B.C., and still earlier columns of mud brick were discovered at Kish; these could

scarcely be disputed, but it was suggested that the form thus early in use was early forgotten, and that Kish and al-Ubaid proved nothing for the later Sumerian age. This column at Ur must date about 2300 B.C.; it stands mid-way between two parallel walls against the faces of which are attached pilasters or jambs in line with the column, suggesting something in the nature of a Greek building *in antis*; we have therefore definite proof that the Sumerian builders at Ur did employ the column in the great age of Sumerian architecture as they certainly did before and, as the formerly discredited instances would show, subsequently in history.

On the south-east side of the town another temple site was discovered and excavated, and here again there were superimposed ruins of the Larsa and of the Third Dynasty periods. Behind the rampart, which was badly weathered at this point, was found a buttressed wall running inland; the character of the buttresses showed that it was a religious building and therefore I decided to clear it, although it formed no part of our main objective. Almost at once there were found against the wall-face clay foundation-cones which though not *in situ* (they ought to have been embedded in the wall's thickness) might be presumed to have come from its destroyed upper courses. Then, clearing the top of the wall, we found, only some fifteen centimetres below the modern surface, a box of burnt brick contrived in the mud-brick core of the wall, in which was an intact foundation-deposit consisting of the copper figure of the king and the brick-shaped inscribed steatite tablet (pl. xxxviii, a, b). The inscription on these was identical with that on the cones: the temple was dedicated to En-ki, the water-god of Eridu, the ruins of which rise in view twelve miles away across the plain, by Rim-Sin king of Larsa; the ninth year of that king's reign was called 'the year in which he built the temple of En-ki at Ur', and our building can therefore be accurately dated to the year 1990 B.C.

The temple lay partly on and partly behind the rampart, the foundations of its western half being stepped down deeply to the terrace-level of the inner town; this half was therefore tolerably well preserved while the high-lying eastern half had suffered severely and all the NE. corner had been weathered away completely. The main lines of the ground-plan could be traced or confidently restored, but the internal details of a building which at best did not rise above floor level could not be ascertained. In a temple of the water-god one would have expected an *apsu*, either a tank or a deep-sunk drain for offerings;

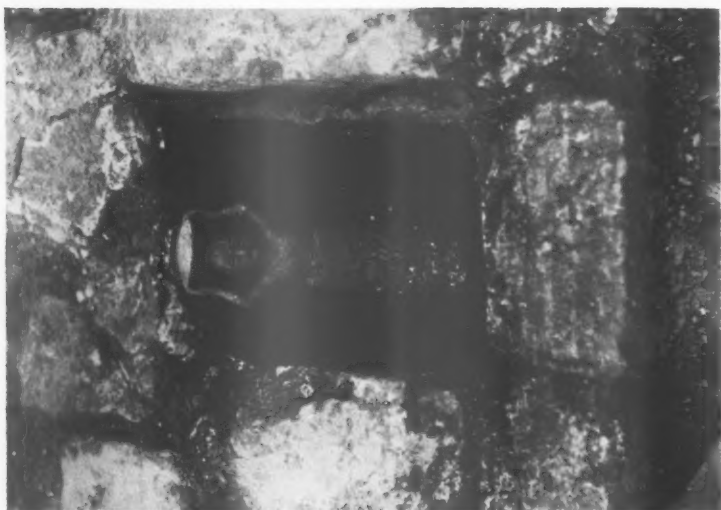
the latter had never existed and of the former, if it had existed, no trace remained. The sanctuary formed a separate block surrounded by a passage, as was the case in the temple E-Nun-Makh, but here too the remains were only just sufficient to justify the restoration.

The temple of Rim-Sin had been built on the site of an older building, probably also a temple dedicated to En-ki, which could be identified by brick inscriptions as the work of Bur-Sin, king of the Third Dynasty of Ur, c. 2220 B.C.; it had been so cut about by the later walls that even its ground-plan was indistinguishable. The remains of the two buildings together are shown on pl. xxxvii, *b* and the restored plan of the Rim-Sin construction on pl. xxxvii, *a*.

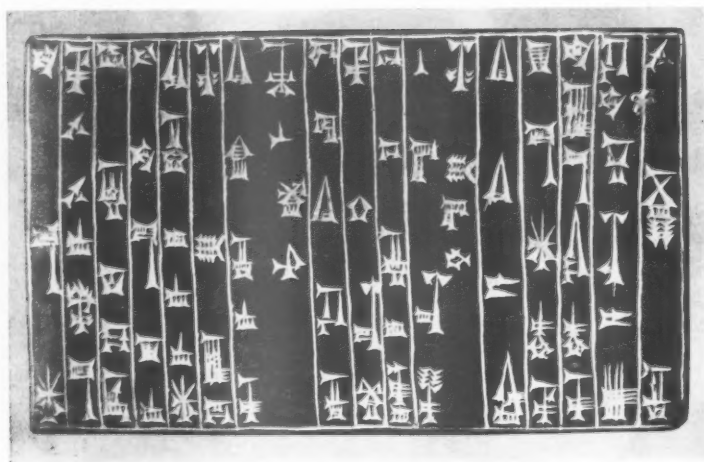
THE CEMETERY

Work was resumed on the cemetery which has figured so largely in the last three reports published in this *Journal*. Three hundred and fifty graves were dug, and though a certain number undoubtedly remain, they are not likely to be such as would repay the heavy cost of excavation; the limits of the principal graveyard have been reached, and beyond those limits there are only outlying burials mostly of late date. So far as the Joint Expedition is concerned, the excavation of the Royal Cemetery is finished.

In the area dug last winter, the SW. end of the cemetery, only two stone-built royal tombs were discovered; of these one had been plundered in antiquity and the second was relatively poor; both were small single-chambered tombs lying at a level considerably higher than any others found. The unplundered tomb contained a wooden coffin in which was a man's body; he had a gold-bladed dagger with a gold-studded wooden hilt and round his head no less than three of the normal head-bands consisting each of two lengths of gold chain and three large beads of lapis and gold. It seems fairly certain that these head-bands took the place of the modern Arab *ageyl* and were worn over a head-cloth, from which one can deduce that the head, like that of the Arab to-day, was clean shaven. In a corner of the coffin, well apart from the head, was a heap of dust preserving the texture of hair, undoubtedly the remains of a wig, and round this was a fillet of thin gold plate, while two gold hair-rings of the usual spiral type lay in the dust. The evidence that the Sumerian was clean-shaven and wore a wig on ceremonial occasions would explain the divergent representations



b. The copper figure in its box



a. The inscribed tablet

The Temple of Enki: Rim-Sin's foundation deposit

in art which have puzzled archaeologists. From another grave was recovered a fine example of the court lady's head-dress with the traditional wreath, in this case of long ribbed leaves with flower rosettes, and with a second wreath having circular pendants formed of gold wire spirals. The beads on the upper part of the body were particularly numerous, and the cloak was fastened with a fine gold pin. In the grave was a small toilet-box of mother-of-pearl and shell and lapis inlay originally mounted on wood; it had a swivel lid of mother-of-pearl, and in one of its two compartments there was still the green paint used for the eyes.

A clay pot in the form of an animal on wheels (with a hole in front for a string to pull it along by), an object rather like an old Staffordshire milk-jug, is interesting as well as curious, for it belongs to the rare group of zoomorphic vases for which some writers have claimed a foreign origin; coming, as it did from the lowest strata of the cemetery it carries the type back to an earlier date than any other example yet known, and makes the foreign attribution perhaps less likely (pl. xli, a).

In 1926-7, when work was being done in this quarter of the cemetery, I reported the discovery of a limited number of graves which gave evidence of partial cremation; since then nothing of the sort had been remarked, but last winter more graves were found in which both the bones and the objects showed clear traces of fire. These graves date just before and just after the First Dynasty of Ur. They include both plain inhumation burials and clay coffin burials; they are confined to one rather outlying corner of the cemetery, and their contents are always poor. Probably they represent some particular element in the population of the town in the days of the First Dynasty; perhaps they were slaves, possibly foreigners.

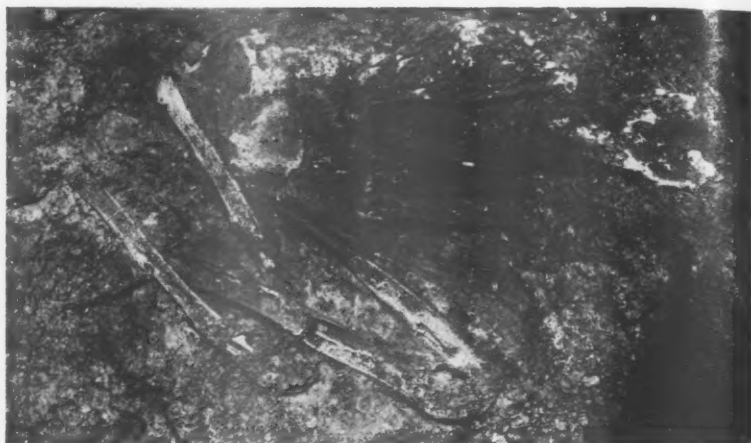
But the main interest of the cemetery work lay in the evidence which was forthcoming for the date of the graves. From season to season there has accrued evidence, not all of which I have been able to publish in these preliminary reports, supporting the view originally put forward that the royal cemetery as a whole must fall between 3500 and 3200 B.C.; but the evidence did not amount to proof, and my conclusions were disputed in a good many quarters. I had already pointed out that between the Sargonic graves of the upper level and the royal cemetery proper there was a 'barren stratum', sometimes pierced by intrusive graves, of course, but everywhere recognizable; it was in this barren stratum that there was found the lapis cylinder seal of Nin-tur-nin the wife of Mes-anni-padda, king of the

First Dynasty of Ur. In the area dug last winter this barren stratum was most noticeable, so well defined by its colour that a photograph of the side of the cutting made by the excavation shows it clearly. It will be remembered that the royal cemetery was dug down into the rubbish-heaps of the earlier town. Where there has been no subsequent disturbance of the ground the sloping strata of ashes, pottery, decayed brick, crumbled mud brick, and so on, are perfectly obvious; where graves have been dug the stratification has of course been destroyed in the process. On pl. xxxix is shown the section of the cemetery area visible on the SW. limits of our excavated area. The upper light bands labelled S.I.S. I and II are, with the dark band between them, the 'barren stratum' of my earlier reports; below them comes a broad confused belt, with no interior stratification, in which lie all the graves of the royal cemetery (the belt is here not so thick as it is farther to the east, where it goes considerably deeper), and below it is a well-defined dark band labelled S.I.S. IV, V. The strata S.I.S. I and II are composed of light-coloured lime rubbish and broken pottery, and the band between them is chiefly of ashes and broken pottery; they are roughly contemporary and were probably of quick growth. In them were found a few tablets and numerous clay jar-sealings bearing the impressions of cylinder seals, and amongst these were examples bearing the names of Mes-annipadda and of his wife Nin-tur-nin. Strata S.I.S. I and II therefore date from, or immediately after, the First Dynasty of Ur. They run *unbroken* over the royal cemetery, the grave-shafts of which were dug from a ground-level that existed before the First Dynasty rubbish was dumped here; the latest graves of the cemetery therefore date from before the First Dynasty of Ur. (see appendix by Rev. E. Burrows, p. 341., with plates XLIX, L).

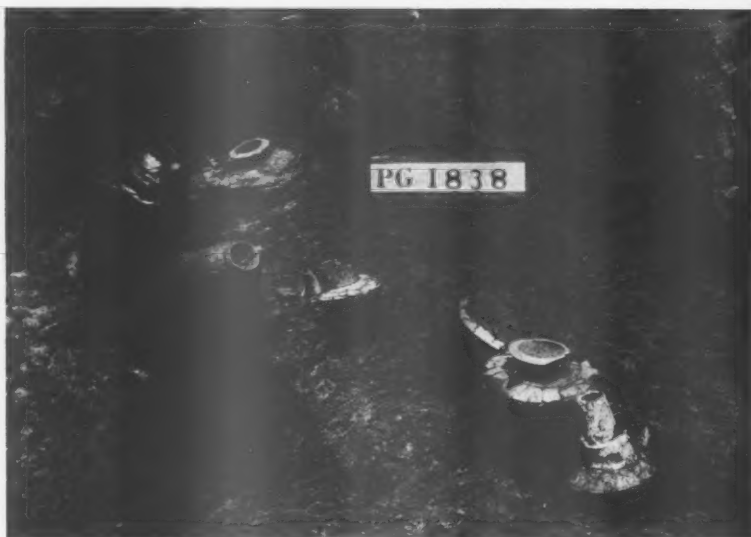
The lowest graves of the cemetery are cut down to or into, but never go right through, the dark stratum S.I.S. IV-V, which is composed of decayed red brick, pottery, and clay jar-sealings.¹ Here were found more tablets and seal-impressions very different from those found above the cemetery. The tablets bear a script which is semi-pictographic, more archaic than that of the seal-cylinders in the royal cemetery, rather more advanced than that of the tablets from Jemdet Nasr, which

¹ The character of the stratum is given as it exists at the point of the section; though it may run consistently over the whole area it is not likely that over the whole area the same sort of rubbish would have gone to its composition, and a stratum red in one place may well be grey or white in another and yet be the same stratum.

Section of soil at the SW. end of the cemetery



a. A contracted burial of the Jemdet Nasr period



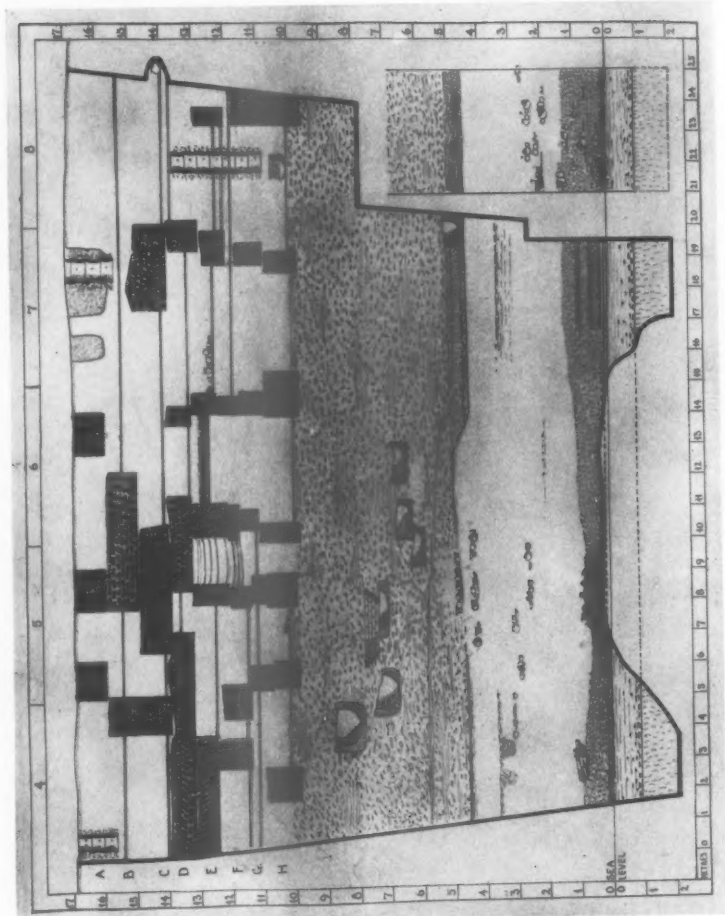
b. Pottery of a Jemdet Nasr grave in position : over the mouth of the nearest pot is inverted a lead tumbler



a. Clay Zoöomorphic vase from the lowest levels of the cemetery



b. Steatite carving of a wild boar : Jemdet Nasr period



Section through the pit sunk to pre-Flood level

were found in association with three-colour pottery. The seal-impressions are most remarkable, and on them there are, as one might expect with objects of a character less directly utilitarian than tablets, more obvious survivals of the old pictographic writing. The collection made from this stratum is more fully described by Father Burrows in a separate section of the report; here I would only emphasize one or two non-epigraphical points. The stratum S.I.S. IV (with which goes S.I.S. V, scarcely to be distinguished from it) was formed and was buried beneath accumulated rubbish to a depth of at least 5.50 metres before the cemetery came into being, for it is in that accumulated rubbish that the graves are made; there was therefore a sensible lapse of time between the depositing of the stratum S.I.S. IV and the digging of the earliest graves. In the stratum S.I.S. IV and belonging to it there were found four copper bull's feet from a large statue of which the body had probably been in wood; their style and technique are identical with that of metal sculptures from the royal tombs, and they prove that the culture represented by the seal-impression stratum is simply an earlier stage of that illustrated by the tombs—the static character of Mesopotamian culture is a commonplace. The stratum is unbroken; the lowest graves were cut down into it (the stone tomb PG/1631 fairly deeply and the great stone tomb PG/1236, found the season before last, more deeply still), but not through it; it forms a very definite division between the confused zone containing the cemetery and what lies below it, but it does not belong in time to the latter, because below it again comes a confused zone containing graves which were not cut through S.I.S. IV but dug down from a surface on which S.I.S. IV was subsequently deposited. The facts of stratification therefore show that on piercing the level in which the seal-impressions occur we must expect to find something materially older than they are.

What we did find was a new series of graves different in every respect from those of the royal cemetery. The bodies (instead of being laid on the side with the hands brought up to the face and the body straight with the legs slightly bent in the attitude of a person asleep, the invariable rule in the royal cemetery and for long after that) are definitely contracted; the hands indeed are brought up close to the face but the backbone is bent and the legs so flexed that the knees come parallel with the chin and the heels almost touch the pelvis (pl. XL, *a*). Such a divergence in the ritual of burial must imply a great difference in time or in religious belief or in race. The contents of the

graves (of which 35 were found crowded together in a small area) are no less striking. Stone vessels were abundant and of types not found in the royal cemetery, lead cups were common in the place of the copper or bronze vases of the later period, and the clay vessels were all of new types marked by sharply angular outlines, lug handles and spouts (pl. xl, *b*), while a pot of plain red burnished ware, resembling fragments which in the winter before we had found associated with sherds of painted Jemdet Nasr pottery, seemed a final argument for assigning the graves to that cultural phase which on other grounds would well fit in at this point of our archaeological sequence. This theoretical attribution was proved correct when a large pot from one of the graves, entirely covered with a coat of earth and salts, was cleaned in the British Museum laboratory and found to be decorated with the three-colour geometrical design characteristic of the Jemdet Nasr wares.

As work went on, the soil in which the graves were dug began to yield fragments of the black-on-white pottery of al-'Ubaid, which grew more numerous as deeper levels were cleared and continued until virgin soil was reached at about modern sea-level. The approach to virgin soil was heralded by alternate thin strata of black mud and greenish sandy clay; the true virgin soil was clay of a stiffer texture.

A second deep shaft was sunk by us farther to the NW. (see sectional drawing, pl. xxxix) and gave consistent results. Here the cemetery zone had already been excavated in 1926-7; it lay higher than to the south and east consistently with the slope of the original rubbish-heaps of which this was about the highest point, but the same underlying strata were encountered. Jemdet Nasr graves were found on the level of those in the first shaft. A little below these was a single grave of the al-'Ubaid period containing a particularly fine handled and spouted pot with a curious design in black on a white ground (pl. xlv, *b*), and a plain hand-made vase with handle and trumpet spout. The grave lay 0.50 m. above virgin soil and 1.50 m. above sea-level. The excavation enabled us to assign the hitherto isolated Jemdet Nasr ware to a definite place in a sequence in relation to the royal cemetery on the one hand and the al-'Ubaid pottery on the other.

It was at first disconcerting to find that in these two shafts, sunk to virgin soil, there was no trace of the clay Flood-deposit discovered in the winter before only a short distance off to the east. The seeming anomaly can be accounted for in a way which explains what would otherwise have been a further



a. Mud-brick wall in stratum C of the pre-Flood pit



b. Kiln with pots *in situ* in the pre-Flood pit



a. An extended burial of the al-'Ubaid period



b. Pre-Flood painted pot (al-'Ubaid I)

difficulty. The rubbish-heaps into which the Jemdet Nasr graves were dug are shown by the pottery in them to be of al-'Ubaid date and must therefore be largely if not entirely pre-Flood; the top of this rubbish-stratum is as high or higher than the top of the clay deposit farther east. The slope of the strata from NNW. to SSE. and again from west to east shows that the pre-Flood rubbish-mounds thrown out from the inhabited island-site formed a sort of promontory running out from the island on the line given by our two shafts. Our pits sunk in 1928-9 on the NE., i.e. on the up-stream, side of this produced an eight-foot deposit of clay; last winter's excavation to the NW., on the edge of the inhabited island (to be described later), produced an eleven-foot deposit of sandy silt. I would suggest that the rubbish-promontory, obstructing the course of the flood in a main channel, caused a back-water eddy resulting in the deposit, up to its own height, of the heavier silt borne by the water; elsewhere a smoother current deposited in a normal way its lighter content. And here a further caution seems to be called for. We have not yet made any trial pits in the plain to trace there the work of the Flood, but it is not to be supposed that over the plain the silt would attain anything like the depth that it does on the town site. Ur was an up-standing island and, like a tree-branch caught in a stream-bed, would intercept the silt and cause the formation of a much larger mound; over the plain the unimpeded waters would pass, carrying the bulk of their silt down to the sea; the depth of sand found piled against and over the island is no criterion of the Flood's effect on the country at large.

THE FLOOD EXCAVATION IN THE TOWN AREA

The third part of our programme at the beginning of the season was to substantiate and add to the evidence already to hand for the historical character of the Flood, evidence derived from small pits sunk through the rubbish-heaps of the cemetery area. It was necessary to work on a larger scale and if possible at a point where house-remains would give a stratification more suited than that of rubbish-mounds to chronological argument. In order to simplify the process I chose a site behind the cemetery and relatively low-lying. Work done here in previous seasons (see *Antiq. Journ.* vi, pl. LVIII) had shown that the area was much denuded by weather in later times and that the modern surface was reduced to that of what we called 'Pre-historic terraces', i.e. a ground-level older than the First Dynasty of Ur; here then we could expect quick results.

The area marked out for excavation was a rectangle measuring 25.00 m. by 16.00 m.; the sides were cut as straight as the soil allowed; the maximum depth reached was 19.30 m. The drawing on pl. XLII gives a medial section through the length of the pit (SW.-NE.) and is based on elaborate measurements and notes; the small section is of the NE. end of the pit along a parallel line farther to the SE., almost against the pit's side, where it happened that more early graves were encountered. In the upper part of the excavation eight distinct building levels were found; walls were of mud brick, floors of beaten clay, and these were in such good condition that no confusion of strata was possible. Plans were made of the buildings in each level, but being of little intrinsic interest are not published here. It should, however, be remarked that as the walls were well built and sometimes particularly solid, attaining a thickness of as much as 4.00 m., a fairly long *floruit* should be assigned to each level, and the total lapse of time represented by the eight levels must be considerable.

The uppermost level contained buildings whose walls were constructed not with shaped bricks but with lumps or basket-fuls of stiff clay set in clay mortar, a form of *terre pisée* building which we sometimes find in the shaft-constructions of the royal cemetery, and in this and the succeeding level, in which the walls were of plano-convex mud bricks, the pottery was just what may be found in the earlier graves: stone vases and a few copper tools showed similar analogies. Further evidence was given by the pottery ring-drains which were numerous at this level. Most of them could be dated by the pottery packing which filled the space between the rings and the sides of the circular shaft in which the drain was contrived, and while some of them were as late as the Larsa period the majority could be attributed to the First Dynasty of Ur. Now these seepage drains may vary in length from five to ten metres or more; few even of the earliest found here went down more than three metres below the modern surface, and it can fairly be assumed that the houses which they served stood on a level at least two metres and probably four metres above that modern surface. We have then to allow for a vertical interval of at least two metres between the highest surviving ruins and the foundations of the walls of the First Dynasty of Ur, and at a normal rate of accretion must date our ruins certainly not later than 3200 B.C.; if the interval was twice as great (as it probably was) the highest ruins must be correspondingly earlier. The evidence of the pottery and other objects will not allow of our assuming more

than the three upper levels of buildings to be synchronous with the royal cemetery.

At 1.25 m. down, but let into the floor and therefore belonging rather to the level above, namely *A*, were some burnt bricks not plano-convex but flat and closely resembling those used in the vault of the tomb of Queen Shub-ad; at 1.40 m. down was a burnt brick also flat but with a long finger-made groove in its upper face, a type never found in the cemetery. The walls of the second and following strata were of mud bricks, plano-convex and often laid herring-bone fashion (pl. XLIII, *a*).

In stratum *E*, on a well-made clay floor at 12.40 m. above sea-level, there was a large collection of stone and clay vases. The clay pots, of which many were spouted, were decorated with cable mouldings on the sharply defined shoulder, with 'gashed' ornament, and with incised hatching. Many were of 'reserved slip ware', i. e. the vessel had been dipped before firing in a bath of thin slip and this had then been wiped off in streaks, leaving a rough pattern made by the contrast between the finer and lighter coloured slip and the darker and coarser body-clay. All these types are strange to the cemetery.

At 10.80 m. above sea-level there began to occur a tall slender clay goblet set on a short stem with circular foot; fifty centimetres lower down it was the commonest type found, the broken examples numbering hundreds; at 9.70 m. it disappeared. This type, equally common and equally short-lived, is found at Kish between five and six metres below plain level.

At this level incised wares were common. At 9.80 m. came the first example of Jemdet Nasr three-coloured pottery and several of buff or pink ware with horizontal red paint bands; a few examples of plain burnished red went with these, and by 9.80 m. above sea-level a plain plum-coloured unburnished ware which had occurred sporadically in higher strata was fairly common. At 9.20 m. began a pink ware with horizontal chocolate bands which is probably only an accidental variant of that with red bands on pink or buff; it was common down to 8.60 m. and thereafter was found but less frequently.

At 9.80 m. above sea-level there were found fragments of a small bottle of glazed frit, originally blue but now bleached to a yellowish white; it had a pear-shaped body and broad flat rim, and was decorated on the shoulder with impressed chevrons. On the same level were two clay jar-sealings with impressions of the naturalistic type found in 'Seal-impression stratum IV' in the cemetery pit between the tomb stratum and that of the Jemdet Nasr graves; a similar seal-impression was

found at 8.60 m. above sea-level and two more as low down as 7.60 m.

On the 8.80 m. level there were found three fragments of Jemdet Nasr pottery, and the proportion in which it occurred in relation to the other decorated wares, pink ware with red bands, plain burnished red, and plain unburnished plum-coloured, rapidly increased until on level 8.30 m. it predominated over the sum of all these. Immediately below this, at level 8.20 m., it disappeared over almost the whole area, and though in one part of the excavation it continued down to 7.80 m. this was the lowest point reached by it. At Kish the Jemdet Nasr pottery comes immediately below the slender goblet type, at 6.00 m. below plain level, and continues to 7.00 m.

Returning to the sectional drawing, we shall see that the slender goblet type, the incised wares, and the burnished or unburnished plain red correspond to the lower building levels, where there had also been a change in the size and shape of the bricks in the walls, which were now flat instead of plano-convex. At 10.00 m. above sea-level the buildings stopped and there began a belt nearly five and a half metres thick composed of ashes and broken pottery; embedded in this were the remains of potters' kilns, lying one above the other and proving that an industry had been practised here for generations. It is in the upper part of this stratum, made up of wasters from the kilns and the ashes from their furnaces, that we find first the pink pottery with red bands and then the Jemdet Nasr wares. All these vessels were wheel made, and at 9.90 m. above sea-level there were found the fragments of a potter's wheel made of clay, a thick disc with its pivot-hole smoothed with bitumen and small holes near the circumference at one point, doubtless for the stick which served to turn it; it was a wheel heavy enough to spin of its own momentum. The kilns were built of fire-clay which by the heat had been turned into slag coloured from red through yellow and green to white. In one of them the vessels for the last firing were found stacked inside, still in place (pl. XLIII, *b*); they were rough hand-made bowls with straight walls and flat rims (the same type occurs in the fifth archaic level at Warka and also at Nineveh). Since this was the highest of the kilns the technique is really a survival, but lower in the stratum a complete change took place and we pass from wheel-made to hand-made pottery. At level 8.60 m. the first two sherds of al-'Ubaid ware occurred, and three more in the next fifty centimetres (except that at the SE. end of the pit there was at 8.30 m. a sort of pocket containing a fair number



a



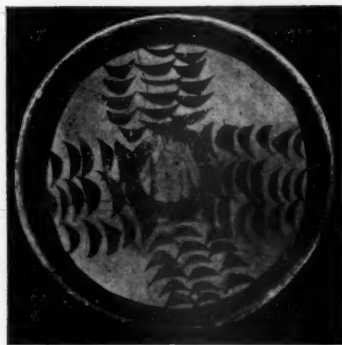
b



c



d

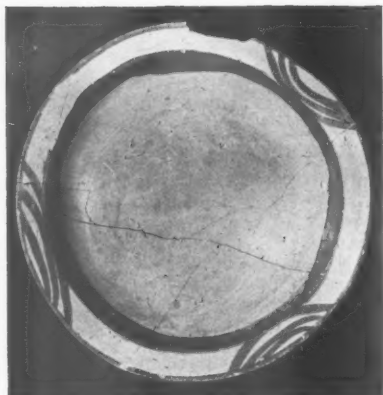


e

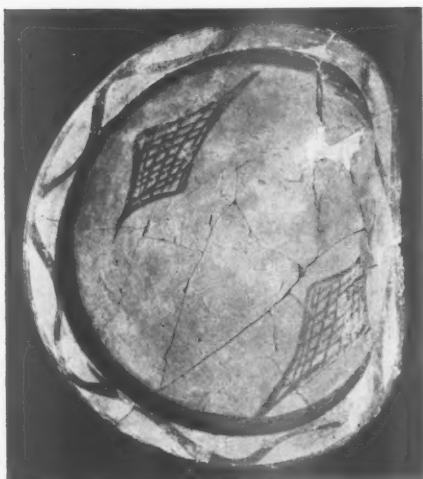
Clay vessels from graves of the period al-'Ubad II



a



b



c



d

a-c. Painted pots from graves of the period al-'Ubaïd II
d. Impression of cylinder seal from Jemdet Nasr stratum

of fragments); between 8.10 m. and 7.50 m. there were perhaps a dozen. Below this the al-'Ubaid fragments were about 40 per cent. of all the coloured wares, the rest being plain red nearly always burnished but with a few plum-coloured pieces; between 7.30 m. and 6.80 m. there were counted 64 of al-'Ubaid as against 79 red, between 6.80 m. and 5.20 m. 379 as against 155, and below this virtually the whole of the painted pottery is of the al-'Ubaid type.

A burnt brick found between levels 7.80 m. and 7.30 m. above sea-level was flat and thin with two small holes drilled through it towards one end; the type has been noted at Kish. At level 8.60 m. there was found a rectangular flat brick measuring 0.21 m. by 0.095 m. by 0.06 m., made of cement; at 7.70 m. (see sectional drawing) there was a circular basin, perhaps used for puddling the potter's clay, lined with cement bricks measuring 0.40 m. by 0.18 m. by 0.11 m., and bricks also of cement measuring 0.20 m. by 0.08 m. by 0.08 m. were found at level 6.60 m. That cement bricks should have been employed at this early period is a most remarkable fact—that it was no unusual thing is shown by our excavations at Meraijib.

The kiln stratum produced, besides vast quantities of pottery, a few copper tools, clay tools, smoothers, etc., used in pot-making, a few beads, chiefly clay copies of the long spirally-marked beads cut from the core of the conch shell, cones for wall mosaic, and three objects calling for special notice. One of these, found at 7.90 m. above sea-level, was a bowl of glazed frit, broken but nearly complete, and preserving the pale turquoise colour of its glaze. Contemporary with the Jemdet Nasr pottery, this is the earliest example that we know of a glazed vessel (though earlier glazed beads are found in Mesopotamia and probably in Egypt, though synchronization for such periods as this would be hazardous, to say the least), and may well raise the question whether such were first manufactured in the Euphrates valley. Ten centimetres lower down in the same stratum was found a remarkable cylinder seal of dark steatite, the oldest that we have in a well-authenticated setting. Its archaic character (see pl. XLVI, *d*) is obvious, but the subject is difficult to determine. On exactly the same level as the cylinder seal was found a steatite carving in the round of a wild boar (pl. XLI, *b*), an astonishing work of art of the Jemdet Nasr age. The animal is represented as crouching down with its chin resting on its fore hooves; the modelling is admirable, and the very definite convention which informs the work is relieved by touches of vivid realism, as, for instance, by the way in which the upper lip is

drawn up in folds to expose the tushes. A flat groove running under the belly and up the flanks was clearly for a support; by analogy with later representations of animals in which they are so often associated with bushes or water-plants, it is not unreasonable to suppose that the support took the form of flat reed-leaves in copper or gold—the boar would then be shown crouched in a reed-bed, his natural lair. In the top of the beast's back there is a cup-like hollow with raised rim; whether this was to hold a liquid used in religious ritual, as has been suggested, or was a socket for a statuette of a god, as seems to me more likely, there is nothing to show. Figures of couchant animals with a similar socket in the back occur nearly as late as the Third Dynasty of Ur.

At about 4.50 m. above sea-level the kiln stratum ceased abruptly, and we came upon a stratum more than three metres thick of clean water-laid sand. It shows no internal stratification, is uniform almost throughout its whole thickness (there is near the top a darker band which may indicate a temporary surface, and there are one or two 'pockets' of darker soil and rubbish which are strictly contemporary with the sand and merely result from an eddy), and, corresponding as it does with the heavier clay belt farther to the east, must be like it the deposit left by the great Flood.¹ It rested on a stratum of

¹ Specimens of the sand and clay from the two deposits left by the Flood were submitted to the Petrographical Department of the Geological Survey, Jermyn Street, for microscopic analysis. Dr. H. H. Thomas's report was as follows:

'The soil specimens and silts have been examined and I find *Specimen Z* is a fine grained, closely laminated silt, the laminae showing definite current-bedding and grading of particles. On a cross-section certain laminae may be seen to wedge out in a manner that can only be accounted for by the action of gentle currents. In a distance of two inches the laminae may tail off from a thickness of one or two millimetres to the merest film. The average thickness of the laminae is something less than a millimetre. The silt has a definite parting parallel to the surfaces of the laminae, which are seen to be covered with the minutest scales of detrital mica.

'In constitution the material is mainly fine angular quartz with much finely divided mica, fairly abundant green hornblende with some augite and magnetite. The particles are somewhat variable in size, as would be suggested by the lamination of the sediment. They range up to 0.1 mm. but mostly they have much smaller dimensions.

'*Sample X*. Has practically the same constitution and texture as *Z* except for the absence of lamination.

'*Sample Y*. A fine clay material with particles mainly under 0.01 mm. and highly micaceous. It is quite possibly water deposited, for it would be difficult to account for it in any other way.

'The absence of lamellation might suggest wind-blown dust, but there is a complete absence of any larger or rounded particles which usually occur in aeolian deposits.

irregular thickness composed of refuse resulting from human occupation—ashes, decayed mud-brick, potsherds, etc. This went down almost to sea-level; below it was a belt about one metre thick of mud, grey in colour above and darkening to black below, much of which was clearly due to the decay of vegetation. In it were potsherds, sporadic above but becoming more numerous lower down and massed thickly at the bottom, all the fragments lying horizontally; they had the appearance of having sunk by their own weight through water into soft mud. At a metre below sea-level came stiff green clay pierced by sinuous brown stains resulting from the decay of roots; with this all traces of human activity ceased.

Evidently this was the bottom of Mesopotamia. The green clay was the floor of the original marsh bordering the island occupied by the earliest settlers in this part of the valley; it was dense with reeds, and the mud of the stratum above was due to the decay of their stems and leaves and to the throwing into the water of rubbish from the island, this of course including the broken pottery. Such accretion slowly raised the bottom of the marsh until it came above sea-level; as soon as this occurred and dry land was formed (the surface of the mud was more gritty and rather like gravel), the occupants of the island spread down over it. At the NE. end of our excavation the accumulation of debris was divided horizontally by three definite floors of beaten clay, showing that occupation had been continuous for a fairly long period. At the SW. end there was a heap of fallen bricks from a pre-Flood building. The bricks, originally of crude mud but hardened by some accidental conflagration and thereby preserved, were flat and rectangular, set in mud mortar. At a point half-way across the excavated area there was a mass of clay lumps burnt red and black; each lump was smooth on one side, and there either flat, convex, or concave, and on the other side bore the deep imprint of reed stems; they were fragments of clay daub from a reed building. On the strength of discoveries made at al-'Ubad I had previously pointed out that the characteristic hut of the pre-Flood Mesopotamian would be just that hinted at by the Utanapishtim legend in which the god, speaking to the hero's house, apostrophizes it as 'Reed-hut, reed-hut'—a structure of reeds and mats plastered with mud: here we have the remains of precisely

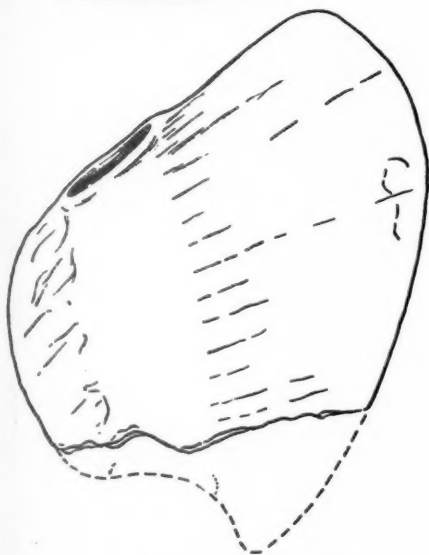
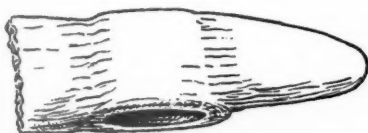
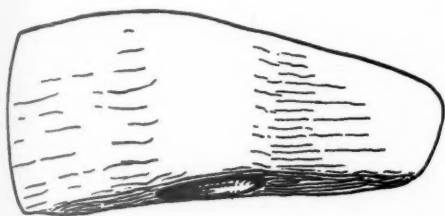
'The material of X and Y appears to be derived in part from a series of hornblende and augitic igneous rocks.'

Samples Z and Y are from the pit excavated this year, X from the shaft sunk in 1928-9.

such a structure. What is of peculiar interest is the fact that the fragments of clay are not all flat on the outer surface but often rounded. The hut would be built as such huts are built to-day: a framework would be put up of fascines of reeds tied together, and over this would be fastened mats, either of woven reed leaves, as is ordinary now, or of parallel reed-stems, the type of mat common in North Syria. Here we have parallel reed-stems probably tied on to horizontal cross-pieces. The coating of clay did not obliterate the structural features of the building; to judge from the fragments found it emphasized it rather than otherwise, and the vertical fascines were reproduced as attached half-columns, the horizontal bands as plain moulding. The flatness of the mud wall was therefore relieved by a system of ornament which corresponded exactly to the lines of its structure. If that is so, we can argue from it to a real architectural sense in the builders of the pre-Flood era. I would further suggest that this primitive wattle-and-daub construction is at the bottom of that convention whereby, in the Larsa period and later, the walls of a temple may be decorated with attached half-columns. I have attributed this form of ornament to the influence of half-timber construction on brickwork; that I believe to be correct, but the frame-and-matting hut is simply a cheaper variant of the half-timbered house, and the mud plaster affords analogies which the bricklayer would be more apt to follow.

The house debris of the antediluvian level produced besides pottery numerous stone pounders and grinders, flint hoes, a fragment of a finely polished black-and-white marble vase, clay sickles, clay models of tools of which the originals were certainly in metal (pl. XLVII, *a*), steatite beads, shell beads, and two beads of amazonite, the nearest known source of which is the Nilghiri hills of central India, though it is found also in Transbaikalia. These would seem to point to an overland trade which, in the pre-Flood age, must strike us as amazing. The clay cones for wall mosaic occurred here as in the higher levels and gave further proof of sophisticated culture.

The pottery of the pre-Flood occupation level was of the types known to us from al-'Ubaid. Here, and more noticeably in the marsh stratum, the thin wares decorated with black on white or green tended to have ornament lavishly spread over the whole ground, bold in design with occasional intrusion of naturalistic and animal motives. With them there were plain hand-made vessels of very light drab clay, for the most part thin and skilfully turned, and fragments of large jars with thick



a. Clay models of metal weapons
from the pre-Flood period



b. Copper spear from grave of period
al-'Ubaid III (on the stem the
impression of the bindings)



Clay figurines from graves of period al-'Ubaid II and fragments (*a*, 1, 2)
found loose in the soil

walls and decoration in black on greenish drab or in chocolate on pinkish drab clay. Many of the pots were spouted, and a fair proportion had loop handles across the mouth. The vertical reeded handles of the Jemdet Nasr stratum were absent in the purely al-'Ubaid level. But about the pottery of the early period the fullest information was given by the graves.

In the sand deposit left by the Flood there were graves. Some of them lay high up in the deposit, between levels 2.50 m. and 4.50 m. above sea-level, then there was a definite gap, and a fresh series of graves going down through the occupation stratum almost to sea-level. The latter must have been dug when the top of the sand formed the ground surface, the former when a considerable layer of kiln rubbish had formed above the sand; the different levels must correspond to a difference in date. That this was so was proved by the pottery. In the lower graves the painted pots were in the majority, and their decoration was generally rich, with a tendency to cover the surface; even in the plainest types, the cups, the field between horizontal bands of colour was relieved by the introduction of small decorative elements, and in the open plates a filling-ornament would occupy part of the ground within the black border. In the upper graves there was never more than one painted vessel, a cup, and that would bear nothing more elaborate than a plain horizontal band, while of the plain vessels, often numerous, the most common type was a sort of chalice on a splayed foot which was never encountered at the lower level. The graves represent two late stages in a culture of which the earlier is given by the contents of the occupation-level and the marsh. The progressive degeneration of ornament and the introduction of certain new types of plain pottery are the most obvious distinction of the stages, but comparison with the remains found at al-'Ubaid itself suggest that the earliest stage was further marked by the prevalence of incised decoration and combed wares.

Turning to the graves themselves, the most surprising feature is the attitude of the body: the skeletons all lie on the back, rigidly extended, with the hands crossed over the pelvis, a position not found at any later date. Of the upper series the furniture consists of one cup of painted ware, with simple horizontal bands, one or more open plates of plain light drab ware, and one or more chalices of drab or red clay; sometimes there is a bottle with globular body and upstanding rim. On the body there may be necklaces or armlets of small ring beads in white shell or steatite. In two graves there were squat pear-shaped

mace-heads of limestone and steatite; in one a fine polished stone hammer-axe and in one a copper spear-head of harpoon type (pl. XLVII, *b*). The graves of the lower series were more elaborate. Sometimes the bottom of the pit was paved with fragments of pottery making a rough mosaic on which the body was laid: painted pots predominated, and there was considerable variety in shape both in these and in the plain wares (the chalice, as already stated, did not occur), and the 'kettle', with long spout and ring handle, was particularly common. Beads showed little change from the later period, and no weapons were found. But the most remarkable objects were the terra-cotta figurines, of which six were recovered from the graves (pl. XLVIII), while fragments of similar figures were found in the occupation-stratum below, to prove that in this respect the people of the earlier grave-group were carrying on a tradition which goes back to the pre-Flood age. The figures vary in height from 0.14 m. to 0.17 m. Some are of hard-burnt greenish clay, with markings in black paint, others of soft lightly fired white clay originally coloured after firing with red and black paint, nearly all traces of which have disappeared, and these have wigs of bitumen applied to the head. All the figures are female, nude, and either holding an infant to the breast or resting their hands on their hips; in all cases the body is well modelled, though there is a conventional exaggeration of the width of the shoulders in contrast to the slender proportions of the rest. The head can only be described as monstrous: the back of the skull rises in an elongated dome (which in the infant is flattened into a fan shape), while the face is more reptilian than human, with eyes set violently aslant. Personally, I cannot believe that the artist who showed such skill with the bodies could not have succeeded better with the heads, supposing that his intention was to represent women, and I am driven to think that the grotesqueness is deliberate and that the subject is some kind of half-human demon. That the figures have a religious significance is certain, and if they really represent a bestial type their importance as documents for the pre-Flood religion is even greater. One head, found below the Flood level, is of a different type, the face being round and flat and the eyes horizontal, but in this also there is the queer elongated formation of the skull. On the painted figures there are black bands round waist, wrists, and neck, but these probably represent belts and strings of beads, and need not imply any dress; certainly the other figures are definitely nude. On the shoulders of all, both back and front, there are marks which in the painted figures are in black, in

the others rendered by small attached lumps of clay; these I take to be coarse tattooing, like the cicatrices of some modern tribes of savages.

At 5.00 m. above sea-level there was found a figurine of a bird with outspread wings, of green clay with black paint markings, intended to be mounted on a stick passing through a hole in its body. At various depths there were animal figurines, most of sun-dried clay, some of baked clay with black paint markings; they represent domestic animals, sheep, goats, cattle, and dogs, and presumably have some religious significance.

A little further light was thrown on the late al-'Ubaid period by some experimental work done at a site called Merajjib, about eleven miles to the south of Ur. Our attention was drawn to it by the discovery, made by native seekers after treasure, of a grave containing fine stone pots very similar to those from our Jemdet Nasr graves. With the approval of the Director of Antiquities, work was undertaken on the site, which, however, proved to be too denuded to repay excavation. The pottery was a mixture of al-'Ubaid painted wares, with some red burnished pottery, and much having incised decoration; a few examples of the later 'reserved slip ware' were also found. The buildings, of which little survived, were constructed, at least as regards the lower part of the walls, of rectangular cement bricks resting (for the mound on which they stood was of loose drift sand) on a mud-brick platform. In one of the houses there were found stone grinders which had evidently been used with a bow drill for hollowing out stone bowls; in another there were quantities of clay roundels, each having a hole pierced through near the rim; strings had been passed through the holes to tie the roundels together in sets of eight or more. Such clay roundels are found at all early levels in the Flood pit at Ur, but their use cannot be determined.

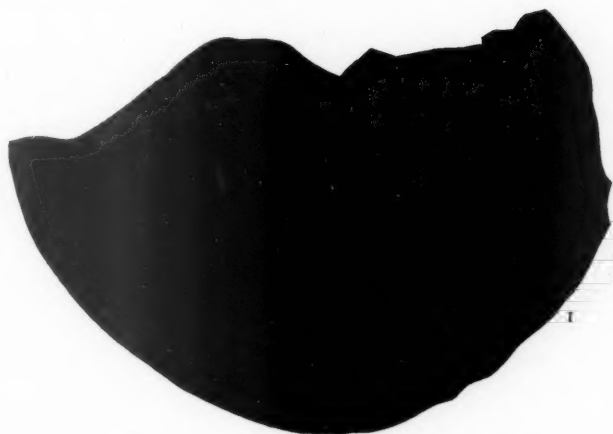
As a result of the season's work we can draw up the following sequence, which accounts for nearly every type of pottery as yet known in south Mesopotamia:

- (1) The First Dynasty of Ur, c. 3100 B.C.
- (2) The Royal Cemetery, c. 3500 to 3200 B.C.
- (3) The period with 'reserved slip ware'.
- (4) The period with the tall clay-footed goblet.
- (5) The lower seal-impression period, c. 3750 B.C. (?).
- (6) The period of pink pottery with red bands.
- (7) The Jemdet Nasr Period.
- (8) The period of plain red pottery.

- (9) The al-'Ubaid period, of which phases II and III are post-Flood.
- (10) The Flood.
- (11) al-'Ubaid period I.

Between (2) and (3) there is a gap, during which the culture seems to be closely akin to that of (2). Stages (5) and (6) may well be synchronous. Stage (8) is one of transition, and at present seems to pass insensibly out of (9) and into (7), but does have a short independent existence.

In order to avoid a confusion already prevalent I must refer to the discovery of a diluvial deposit at Kish, which also has been held to represent the Flood of Sumerian legend. This deposit, about eighteen inches thick, is certainly not the same as that at Ur described in this and my last reports. It is dated by the discoverers between 3400 and 3200 B.C., and runs unbroken over the cemetery, which they date at 3400 to 4000 B.C. (S. Langdon, 'Excavations at Kish, 1928-9', in *Journal of the Royal Asiatic Society*, 1930, p. 601; quoting M. Watelin). The cemeteries at Kish and at Ur are shown by their contents to be of much the same date, although that of Kish may well go back somewhat earlier for its beginning (so as to cover the gap between my stages (2) and (3) above); Langdon's positive dating appears to me to be much too early. The main point is that the Kish flood deposit comes on the top of a cemetery whose latest date cannot be far removed from the latest date of that at Ur; below the Kish cemetery comes a level containing masses of fragments of the tall goblet type of vase (my stage 4), together with plain red pottery, and below this again comes the Jemdet Nasr level. In the particular spot chosen for deep excavation at Kish, Jemdet Nasr occupies the lowest stratum resting on virgin soil, and there is no vestige of al-'Ubaid occupation. At Ur the Flood level comes under al-'Ubaid II, and is therefore separated from the Kish flood by eight different cultural strata, which in time must mean a very long interval indeed. Actually there is in the same pit at Ur between levels 14.00 and 15.50 m. above sea-level a waterlaid deposit filling all the space between the walls; it is composed of minute strata averaging less than a centimetre in thickness, and must have resulted from continual flooding of the same area: stratigraphically this might conceivably represent the same flood as has left its traces at Kish, and if so the time-gap between it and the great flood deposit between levels 1.00 m. and 4.50 m. above sea-level is even more obvious, though not more real, than if we simply contrast the two sites. It must be remembered that



2

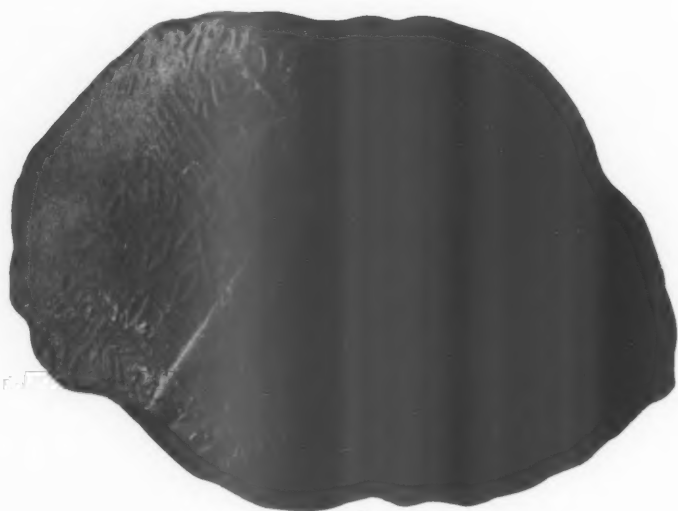


3



4

Seal-Impressions



1



2



3



4



5

Seal-Impressions

floods are common things in Mesopotamia; if we are to connect extant traces of a flood with that described in the legends, we must look for something (*a*) so vastly surpassing the normal that the memory of it endured through centuries, and (*b*) so much earlier than any written record of it that its story had become miraculous and the gulf had to be bridged by dynasties of fabulous longevity, while (*c*) its social effect must have been such that for the later historian it marked an epoch. The conditions (*a*) and (*b*) are surely better met by the magnitude and position of the Ur deposit. As regards the condition (*c*) Langdon argues that the Kish flood does close an epoch, on the ground that the cemetery below the deposit 'contains pottery types almost totally different from those above the Flood stratum'. This is of course true of the part of the site excavated by Watelin, but breaks of continuity in archaeological stratification are quite normal, as every digger knows, and Langdon's deduction from this negative evidence disregards everything that we know about early Sumerian history. The Kish graves are admittedly homogeneous on the whole with the Ur graves; the upper strata missing at Kish are present at Ur, and, so far from the culture represented by the graves stopping short with the end of the cemetery period, it is carried on with remarkable continuity into the First Dynasty of Ur, which on Langdon's own dating is post-Flood. The Sumerian annalists believed that between the Flood and the First Dynasty of Ur there came two very long dynasties, of Kish and of Erech. To make the Flood occur shortly before 3000 B.C. is to reject a tradition which *a priori* should have some foundation in fact; and to assume that occurring then it altered the course of civilization is absurd, because there is no such alteration. If the Ur deposit marks the Flood of Sumerian legend the introduction soon afterwards of the Jemdet Nasr pottery, almost certainly a foreign fabric, may be taken to satisfy the condition.

APPENDIX

TABLETS AND SEAL-IMPRESSIONS

By E. BURROWS

The bulk of the material came from one site. The vertical south-western side of the cemetery excavation showed a well defined succession of sloping strata containing rubbish thrown down from the old town westward of the cemetery. In several instances the strata so discovered could be correlated with strata within the cemetery excavation. Many

of these strata contained tablets and, especially, numerous jar-sealings, i. e. lumps of clay put on the tops of jars, often showing on the under side the impression of the jar, and even of the linen cover and string, and impressed on the upper part with a cylinder seal or other distinctive marking. Eight 'seal-impression strata' have been distinguished with greater or less clearness: they are designated S.I S. I to S.I.S. VIII.

There is evidence that S.I.S. I ran unbroken over the whole main cemetery. If S.I.S. I can be dated we thus have an important *terminus ad quem* for the chronology of the cemetery. Now a fine jar-sealing from S.I.S. I bears the inscription *Mesannipadda*,¹ the well-known name of the founder of the First Dynasty of Ur (pl. XLIX, no. 1): another gives *nin tur nin*, already known as the designation of the wife of Mesannipadda (pl. XLIX, no. 2).

S.I.S. II and III do not differ much in contents from S.I.S. I. About 80 jar-sealings and a few tablets were recovered from these top strata.

With S.I.S. IV we come to another and much earlier epoch. This, by far the richest stratum, produced 62 tablets and fragments and over 500 jar-sealings. These objects are similar to the few jar-sealings and the many tablets found in the preceding year in the rubbish wherein were dug the early graves of the cemetery (*Ant. Journ.* ix, 343). The contemporaneity of the two groups is also favoured by the stratification. For the *terminus a quo* of the royal cemetery we have, therefore, the evidence afforded by S.I.S. IV. The date of the tablets found in 1928-9 was discussed in the last report (*loc. cit.*). The material on which to form a judgement is now greatly increased.

The 500 seal-impressions from S.I.S. IV are exceedingly interesting. They are very similar in a general way, and sometimes in detail, to those found at Susa and published by L. Legrain. The apparent connexion between Ur and Elam, and the correlation of S.I.S. IV with Susa II, raise important historical and chronological questions.

Many forms characteristic of the present collection are new. The following is a summary account of it. Divinities and heroes are hardly, if at all, represented: human forms are not very common: animals are frequent, especially the antelope, capridae and the like, and the scorpion. Among more elaborate representations is the remarkable chariot scene (pl. XLIX, no. 4), and many impressions showing a cattle-byre or dairy scene like that of the frieze of al-'Ubaid (*Ant. Journ.* iv, 342), the gate, however, being barred with 3, 4, or 6 bars (pl. L, no. 3). A large proportion of the designs are linear patterns, geometrical or arabesque, often curiously complicated and ingenious (pl. XLIX, no. 3). Sometimes script signs occur in combination with these decorative patterns. There are besides many impressions which are entirely inscriptions. So far as made out, these contain ideograms of cities: Kesh, Adab, perhaps Ur, and frequently Larsa (cf. pl. L, no. 2). Of one inscription many of the signs seem to be otherwise unknown (pl. L, no. 1). Two or three inscriptions have

¹ The inscription is puzzling: *Mesannipadda lugal Kiš-ki dam nu-gig* = M. king of Kish (or universal king): [his] wife the hierodule (or husband of the hierodule).

pure pictographs mingled with the writing signs (e. g. the bird, pl. L, no. 2).

Many jar-sealings are stamped with circular impressions, sometimes plain and sometimes having a decorative element—most often a rosette. In many cases, at least, the stamps were made by the ends of the cylinder-seals. Numerous jar-sealings, instead of being impressed by a seal, were scratched or incised with rough markings, or more rarely, definite signs. Counterparts of certain sealings characteristic of S.I.S. IV have been recently found in an early level at Warka.

S.I.S. V, so far as known, is similar to S.I.S. IV. A pit in the western corner of the site cut three lower strata S.I.S. VI, VII, VIII. The writing on the few tablets here found hardly differs from that of S.I.S. IV; but the seal-impressions seem to indicate a more primitive art, and forms characteristic of S.I.S. IV are generally absent. Pl. L, no. 5 represents a building from this remote period (S.I.S. VIII); and pl. L, no. 4, also S.I.S. VIII, is the first example of what is provisionally called the leaf-pattern which, with a difference, is exceedingly frequent in S.I.S. IV.

The jar-sealings number in all about 650, without counting the stoppers that were marked otherwise than by seal-impressions. Only one cylinder seal was found in these strata, and that was of clay, unpierced. There were two stamp seals, also of clay.

Cornucopia bowls and allied vessels

By T. DAVIES PRYCE, F.S.A.

DURING the last twenty years the study of Samian ware has made great advances and, notwithstanding the disfavour with which the 'intrusive fragment' and 'pots and pans' are still regarded by a certain class of historian, the value of this fabric for dating purposes is now generally recognized. We are now familiar with most of the decorative types that are characteristic of the pre-Flavian (*circa* A.D. 25-68), Flavian, and late Hadrianic-Antonine ages, but much remains to be learnt with regard to the ornamental detail of the intervening period, broadly speaking the first third of the second century. Although late South Gaulish ware, ornamented in the Flavian manner, continued to be imported down to about A.D. 110, a number of new decorative types, derived from Central or from early East Gaulish potteries, began to appear late in the first century and early in the second.

In this paper attention is directed to some examples of this class of ware, that is, to certain decorative details which are characteristic of the first third of the second century, but all of which are not necessarily confined within the limits of that period. Bowls ornamented with 'detached' *cornuacopiae* are more especially studied, but reference is also made to certain decorative types that occur on closely related and contemporary Sigillata.

I. *Cornucopia bowls*. Cornucopias of the class under consideration are not connected or associated with figure-subjects such as Abundance (Déch. 473); they are 'detached', occurring free in the field and are usually grouped in pairs (nos. 1-7, 9). An acanthus leaf is commonly 'apposed' to each pair (nos. 1, 1A, 2-5, 7, 9). Typically they are ribbed and, in the best preserved examples, three prongs project from their broad ends (nos. 2-5, 7). They are frequently depicted in the upper concavities of a winding stalkless scroll (nos. 1, 1A, 4, 5, 7, 9), a schematic arrangement which suggests a common inspiration.

On form 37 the design is often closed by a 'ram's-horn' straight wreath (nos. 2, 3, 4, 6).

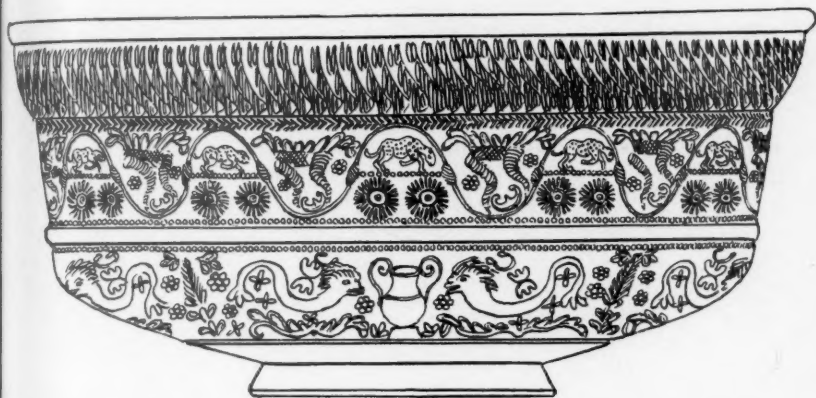
The 'rams-horn' wreath is depicted in two chief varieties: (i) the borders of the leaves are beaded or have rounded indentations and their junction is marked by one or more beads (no. 2)

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or (ii) the leaf-borders are sharply serrated and there is no beading at their junction (nos. 3, 4, 6).

No. 1. Form 29. Stamped *RANTOF*, found at Heddernheim.

The bowl is dated by German authorities to *circa* A. D. 90 and is considered by Fölzer (*Römische Keramik in Trier*, p. 81) to have been made at the East Gaulish Pottery of Luxeuil. The vessel displays many



No. 1 (3)

features characteristic of late examples of this form, such as the heavily notched rouletting of the rim which has only a single moulding, thus differing from the normal form 29 with its two rouletted mouldings.

Paired cornucopias and opposed acanthus leaves are seen in the upper concavities of the stalkless scroll of the upper frieze (cf. nos. 1 A, 4, 5, 7, 9).

This scroll has a 'mid-way' cable-like thickening (cf. nos. 1 A, 7, 9). *Peltae* are seen in the field (cf. nos. 1 A, 6, 7). The ornament of the lower concavities of the scroll is depicted in two compartments, demarcated by a bead-row (cf. nos. 1 A, 4, 7, 9, for bead-row or wavy line), an arrangement reminiscent of South Gaulish decoration.

Period: 'Turn' of the first and second centuries, *circa* A. D. 90-110.

No. 1 A. Form 29. Guildhall Museum, London.

This interesting and late example of form 29 is characterized by the use of wavy lines, in place of the usual bead-rows, as demarcating motifs.

The schematic arrangement of the upper frieze is similar to that of the *RANTO* form 29 (no. 1), the forms 37 from Vichy and Colchester (nos. 4, 5) and the Caersws form 30 (no. 9), being composed of a stalkless scroll the upper concavities of which are filled with paired cornucopias

and apposed acanthus leaves. Compare also the *IOENALIS* bowl (no. 7). In most of these examples the scroll carries a 'mid-way' cable-like thickening. The beaded rosettes flanking each pair of cornucopias occur on the *RANTO* (no. 1) and Vichy bowls (no. 4). The *peltae*, below each pair of cornucopias, occur in this situation on the *RANTO* bowl (no. 1) and in closely similar associations on the *IOENALIS* (no. 7) and York vessels (no. 6). The goat is a *Lezoux* type, as subsequently used by *GINNAMVS* (Déch. 889).

The vine-trees of the lower frieze are reminiscent of those used by the Nero-Flavian potter *GERMANVS*, whilst the vintage scene depicted has close parallels in the work of the Trajan-Hadrian potter *SATTO*.

Period: A. D. 90-110.

No. 1 B. Form 29. Dove Collection; found in London.

The fragment displays the same single, heavily rouletted rim-moulding as the *RANTO* bowl, a feature also shared by a late form 29, stamped with the early *DD* monogram, which was found at Caerwent (*Brecon*, fig. 86, no. 1). The lower rouletted rim-moulding of the normal form 29 has been replaced by a pronounced ridge, as in a late form 29 at Leicester (Oswald and Pryce, *Terra Sigillata*, xxviii, 10). The paired cornucopias of the upper frieze show traces of 'ribbing' at their lower extremities.

Period: 'Turn' of the first and second centuries.

No. 2. Form 37. Found at Rottweil (Knorr, *Rottweil*, 1907, ix. 1).

On this fine bowl are seen paired cornucopias and upright and inverted apposed acanthus leaves, astragali with swollen central beads, and crown-like objects in the field. The design is closed by the already described 'ram's-horn' wreath. South Gaulish influence is indicated by the persistence of the cuneiform, spurred, and stipuled leaf.

Period: Trajanic, with possibly some initial overlap.

No. 3. Form 37. Found in London (Brit. Mus. *Cat.*, M. 1102).

On this fragment are seen paired cornucopias with apposed acanthus leaves, both upright and inverted. From the broad ends of the cornucopias project the typical three prongs (cf. nos. 2, 4, 5, 7).

The stalks of the scroll terminate in:

(a) A leaf composed of a central spiral and two curved laterals, a type frequently met with in ware of this period (cf. nos. 1 B, 7).

(b) A cuneiform, spurred, and stipuled leaf, as so frequently found on South Gaulish ware of the first century (cf. no. 2).

The design is closed by a 'ram's-horn' wreath, bordered above by a clearly defined wavy line.

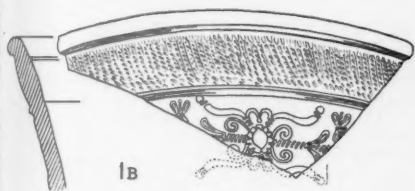
Period: Trajanic.

No. 4. Form 37. Found at Vichy (Mus. St. Germain, 76967).

The paired cornucopias and associated acanthus leaves are seen in the upper concavity of the stalkless scroll. The design is closed by a 'ram's-horn' wreath of a type not only frequently associated with the detached cornucopias (nos. 2, 3, 6) but also with 'crowns', astragali with swollen



1A



1B



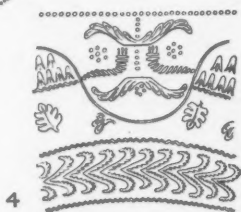
2



5



3



4



6

Nos. 1A-6 ($\frac{1}{2}$ except no. 5 which is $\frac{2}{3}$)

central beads, and other small objects (cf. *Brecon*, S. 184). This class of wreath is particularly frequent on early second-century ware found at Vichy (Mus. St. Germain).

The wavy lines are sharper and more clearly defined than those of late South Gaul, but Rutenian influence is seen in the grouped arrow-heads.

Period: Trajanic.

No. 5. Form 37. Found at Colchester (General coll., 142.94).

The ovolo has a rosette terminal with a central ring, and is bordered below by a wavy line. The concavities of the stalkless scroll contain paired cornucopias and acanthus leaves, and also figure-subjects.

The cupid bears some resemblance to that illustrated by Déchelette, type 248, Les Martes-de-Veyre (Puy-de-Dôme), [Marcillat (Allier), coll. Kuhn].

The design is closed by a repeated bilateral leaf of chevron type, similar to that occurring as a demarcating *motif* on the signed bowl by IOENALIS, found at Colchester (no. 7).

This wreath is bordered above and below by rows of fine beads, as not infrequently occurring in the early third of the second century (cf. the IOENALIS bowl, no. 7).

Period: Trajanic, with, possibly, some terminal overlap.

No. 6. Form 37. Found at York.

Good glaze and workmanship. The decoration displays most of the features already noticed, i. e. paired cornucopias, acanthus leaves and the 'ram's-horn' wreath. *Peltae* occur in the field as on the RANTO, Guildhall, and IOENALIS vessels (nos. 1, 1A, 7).

The demarcation of the panels by rows of comparatively large beads is a Central Gaulish feature, as also are the figure-types.

(1) *Victory* (Déch. 484, ALBVCIVS, AVENTINVS, BANVVS, DECIMANVS).

(2) *Vulcan* (Déch. 39, Lezoux, ADVOCISVS, CERIALIS, CINNAMVS).

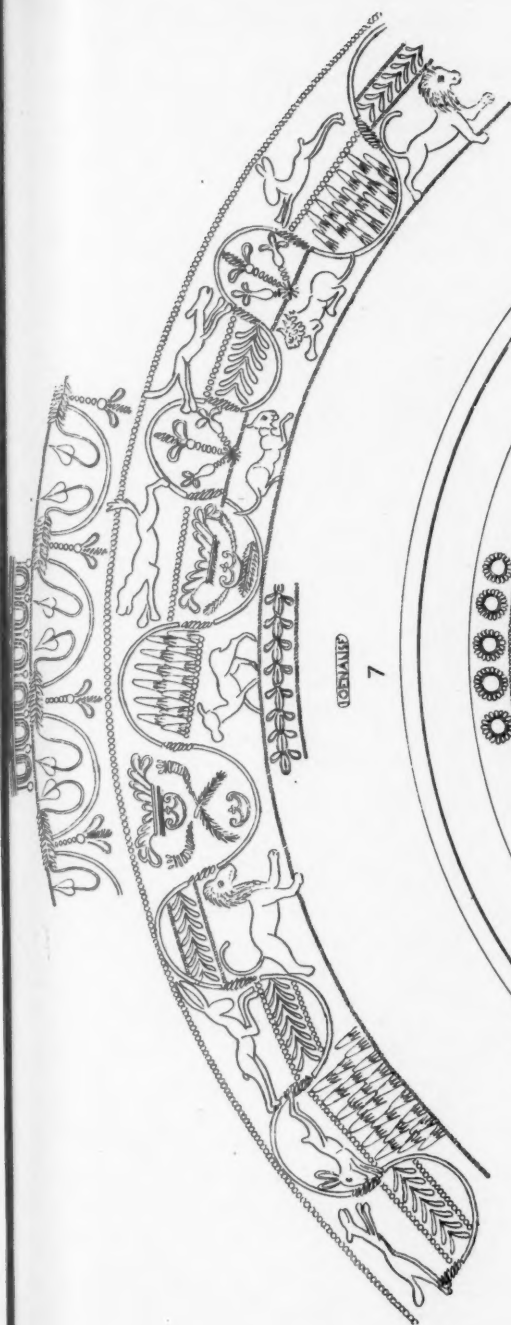
This Vulcan also occurs in the Trajanic period at Brecon (S. 113) and in the work of the Trajan-Hadrian potter ARCANVS (Knorr, *Rottenburg*, ix, 1).

South Gaulish influence is entirely absent from the decoration of this bowl.

Period: Trajan-Hadrian.

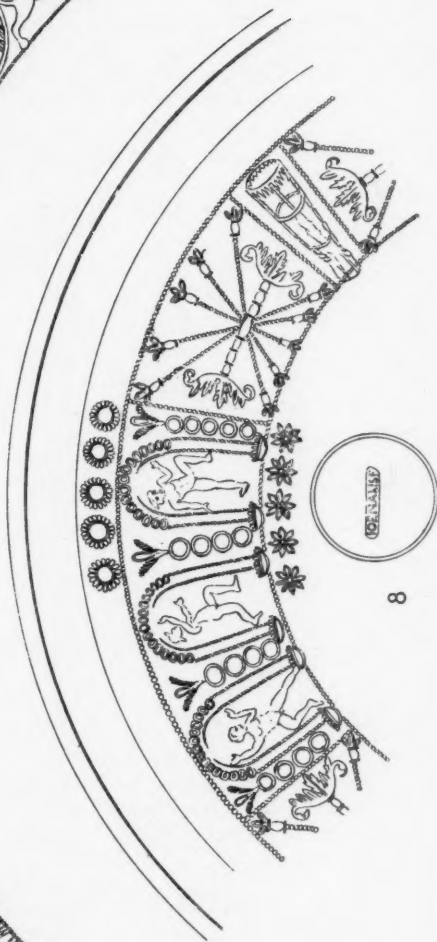
No. 7. Form 37. Stamped IOENALIS.F on the basal exterior. Found at Colchester.

The tongue of ovolo has a terminal rosette. Zonal decoration, demarcated by bead-rows. The beads of the rows bordering the ovolo and the straight wreath which closes the design are extremely fine, whilst those dividing the two zones are of medium size. This association of small and medium-sized beads on the same bowl is characteristic of the decoration of a certain amount of Sigillata of the early third of the second century (cf. *Brecon*, fig. 86, 4; Behrens, *Katalog Bingen*, 1918, 12, 4).



7

GERMAN



8

GERMAN

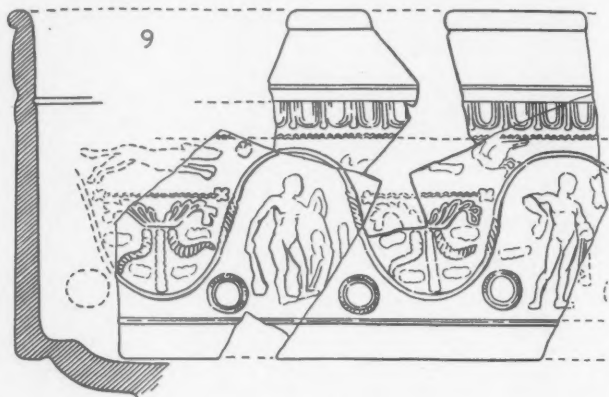
Nos. 7, 8 (1)

F. OSWALD DEL.

and Knorr, *Blickweiler und Eschweiler Hof*, text-fig. 23, both on bowls by the early second-century Lezoux potter **BIRRANTVS**).

On the upper zone is a continuous festoon after the manner of South Gaul, but differing from Rutenian work in certain of its decorative elements, notably the pendent leaf with its central spiral and curved laterals.

The lower zone is decorated with a stalkless scroll having 'mid-way' spiral thickenings (cf. nos. 1, 1A, 9). The concavities of the scroll are



No. 9 ($\frac{1}{2}$)

divided—with one exception—into compartments by means of bead-rows and chevron straight wreaths, a practice frequently followed in South Gaul. Here, however, the usual Rutenian wavy line is replaced by a bead-row.

The paired cornucopias and apposed acanthus leaf are seen in one of the upper concavities of the scroll. The cornucopias have the typical three prongs. *Peltae* in the field. No exact parallels for the animal types are figured in Déchelette, but the crouching lion to l. bears some resemblance to those on bowls which are decorated with an early **OD** monogram, Brecon type no. 2 (cf. *Brecon*, fig. 86, nos. 3, 4). This type of monogram was used by the early second-century potter **DONNAVCVS** (see p. 353). A closely similar lion is seen on early second-century bowl, found in London (Brit. Mus. Cat., M. 1062).

Period: Trajanic, with possibly some initial overlap.

No. 8. Form 37. Stamped **IOENALIS F** on the basal exterior. London Museum.

The bowl is illustrated for purposes of comparison. Note the aberrant ovolo of repeated bead-bordered rings, the crowns integral with the demarcating *motifs* and the acanthus leaves of the cruciform ornaments (cf. Brit. Mus. Cat., M. 1334; *Brecon*, fig. 86, no. 3). The figure-types are central Gaulish.

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No. 9. Form 30. Found at Caersws, Montgomeryshire. Worn glaze and workmanship.

The internal groove, below the rim, is reminiscent of the more elaborate internal fluting of first-century examples of this form.

The design consists of a stalkless scroll (with 'midway' cable-like thickenings), in the upper concavities of which are depicted paired cornucopias and apposed acanthus leaves, as on the RANTO, Guildhall and IOENALIS bowls (nos. 1, 1A, 7). These concavities are divided into two compartments by wavy lines (cf. nos. 1, 1A, 4, 7). In the lower concavities are seen (i) Hercules (Déch. 446, Lezoux) and (ii) Perseus with Medusa's head (cf. Déch. 145, Lezoux).

The division of alternate concavities of the scroll into two compartments suggests Rutenian influence, but the figures are definite central Gaulish types.

Period: Trajan-Hadrian, *circa* A. D. 110-38.

The following examples of the detached cornucopia have also been recorded:

Form 37. Found (but not made) at Blickweiler (Knorr, *B. und E.* lxxxiii, 3). Scroll, cornucopia, cuneiform leaf, ram's-horn wreath. Period: Trajanic.

Form 37. London Museum, A. 5364. Paired cornucopias; acanthus leaf. Period: Trajanic.

Form 37. Mould, found at Luxeuil (Fölzer, *op. cit.* 1, 1). Cornucopias, wreath of approximately ram's-horn type. Period: Trajanic.

Form 64. Guildhall Museum. Paired cornucopias, bow and quiver, lyre. Period: Trajanic.

Form 37. Silchester. Paired cornucopias, acanthus leaf, astragalus with swollen central bead, cuneiform leaf, ram's-horn wreath. Period: Trajanic.

Form ? 37. Found at Mandeure (Fölzer, *op. cit.* 1, 5). Cornucopias and wreath approximating to the ram's-horn type. Period: Trajanic.

Form ? 37. Found at Bonn (Fölzer, *op. cit.* 1, 16). Cornucopias, lyres, bow and quiver. Period: Trajanic.

Form 37. London (Guildhall Museum). Paired cornucopias, ram's-horn leaf, S-ornaments—South Gaulish type. Period: Trajanic.

Form 37. London (Guildhall Museum). Paired cornucopias, apposed acanthus leaf, stalkless scroll, grouped arrow-heads, bead-bordered rings. Period: Trajanic.

Form 37. London (Oswald coll.). Paired cornucopias on bead-row. Period: Hadrianic.

Form 37. Found at Richborough, 1928. Astragalus with swollen central bead, cornucopia. Period: Hadrian-Pius, *circa* A. D. 130-50

Form 37. Found at Balmuildy (Miller, xxxv, 68). Cornucopia. Period: Antonine.

The data detailed above, although admittedly incomplete, warrant the conclusion that the detached cornucopia is a decorative type which is particularly characteristic of the first third of the second century. The type, therefore, throws a welcome chronological light on a ceramic period which is none too well dated. The earliest examples may, perhaps, be assigned to the last decade of the first century and occasionally this *motif* may be found singly (not paired) on decorated Sigillata of Antonine date, as at Richborough and Balmuildy.

II. *Closely allied to and largely contemporary with the cornucopia bowls* is a class of fabric which frequently carries many similar decorative elements, such as the ram's-horn wreath, the astragalus with swollen central bead, the 'crown' in the field, the acanthus leaf, grouped arrow-heads, the lyre and the bow and quiver. In addition, one or more of these *motifs* may be associated with the two early DD monograms (*Brecon*, p. 193; types i and ii), serpent-like objects and shields in the field and a straight wreath of repeated 'anchor'-like ornaments.

The following list, which is by no means exhaustive, demonstrates the frequency and widespread distribution of this class of ware¹:

<i>Form</i>	<i>Provenance</i>	<i>Types</i>
37	Brecon, S. 184	Early DD monogram (<i>Brecon</i> , type 1), lyres, bows and quivers, astragali with swollen central beads, grouped arrow-heads, leaf with central spiral and curved laterals, ram's-horn wreath.
37	London, B.M. M. 1148, see <i>Brecon</i> , fig. 86, 2.	Early DD monogram (<i>Brecon</i> , type 1), lyres, bows and quivers, crowns, ram's-horn wreath.
37	Clermont-Ferrand, B.M. M. 50.	Crowns, peltae, grouped arrow-heads, ram's-horn leaves.
37	Morel coll., B.M. M. 57.	Shields in field, acanthus leaves, 'anchor' wreath, grouped arrow-heads.
37	London, B.M. M. 1141.	Serpent-like ornaments joined in tree-form, ram's-horn wreath (omitted in illustration).
37	Augsburg, Knorr, <i>B. und E.</i> , lxxxiii, 7.	Serpent ornaments, ram's-horn wreath.
30	Rottweil, Knorr, 1907, ix, 4.	Ram's-horn wreath.
37	Caerhun (not yet published).	Serpent ornaments.

¹ As yet, no indubitable example has been recorded in Scotland.

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<i>Form</i>	<i>Provenance</i>	<i>Types</i>
37	London, B.M. M. 1067.	Crown, ram's-horn wreath.
37	Strasbourg, Knorr, <i>B. und E.</i> , lxxxiii, 5.	Crowns, ram's-horn wreath.
37	London, B.M. M. 1206.	Crowns, acanthus leaves, 'anchor' wreath.
37	London, B.M. M., 1274.	Ram's-horn wreath.
37	Brecon, S. 97.	Ram's-horn wreath.
37	London, B.M. M. 1301.	Bow and quiver, lyre, leaf with central spiral and curved laterals.
37	Wroxeter, Rep. III, xxiv, 7.	Crown, bow and quiver, ram's-horn wreath.
37	Brecon, S. 204.	Ram's-horn leaves, lyres, leaf with central spiral and curved laterals.
37	London, Lond. Mus. A. 23534.	Bows and quivers, lyres, crowns, helmets, grouped arrow-heads, diagonal wavy lines and many Central Gaulish figure-types.
37	London, Lond. Mus. A. 11691.	Ram's-horn wreath, diagonal wavy lines and grouped arrow-heads, Central Gaulish figure-types.
37	London, B.M. M. 1334.	Crowns and shields in the field, 'anchor' wreath.
37	London, B.M. M. 1441.	Acanthus leaf, leaf with central spiral and curved laterals, ram's-horn wreath.
37	London, B.M. M. 1514.	Crowns, ram's-horn wreath (omitted in illustration).
37	Richborough, Rep. II, xxviii, 4.	Crown, ram's-horn wreath.
37	Caerleon, <i>Archaeologia</i> , lxxviii, fig. 18.	Crown, serpent ornament, ovolo, composed of repeated DD monogram (Brecon, type 2). Stamped DONNĀVCI on the basal exterior as the IOENALIS bowls.
37	Heddernheim, Fölzer, i, 4.	Crowns, astragali with swollen central beads.
37	Heddernheim, Fölzer, i, 3.	Astragali with swollen central beads, oblique wavy lines and arrow-heads.
37	Heddernheim, Fölzer, i, 8.	Serpent ornaments, astragali with swollen central beads.
37	Heddernheim, Fölzer, i, 9.	Astragali with swollen central beads, cuneiform leaf.
37	Trier, Fölzer, i, 10.	Crowns, oblique wavy lines and grouped arrow-heads.
37	London, B.M. M. 1468.	Crown, snake ornaments, ram's-horn wreath.

<i>Form.</i>	<i>Provenance.</i>	<i>Types.</i>
37	London, B.M. M. 1548.	Double acanthus 'ovolo', helmets in field (cf. Fölzer, type 17), ram's-horn wreath.
37	London, Guildhall Museum 1252.	Repeated GD monogram (Brecon, type 2), serpent-like ornaments in the field.
37	Silchester, Reading Museum.	Serpent (or eel) ornaments, detached three-bladed leaves, ram's-horn wreath.

This ware is usually of good texture with well-modelled decoration and although Rutenian influence sometimes persists in the schematic arrangement of the ornamentation, the not uncommon presence of grouped arrow-heads and the cuneiform leaf, the quality of the fabric indicates a marked revival of the Sigillata industry, when compared with the coarse products of the late South Gaulish potteries.

Although the period of production of the major part of this ware (including the cornucopia bowls) may be assigned to the first third of the second century, it is not possible in the present state of our knowledge to allocate it with certainty to any particular Pottery or group of Potteries. The definitely associated potters are **RANTO**, those who used the early **GD** monograms, (Brecon, types i and ii) amongst whom must be included **DONNAVCVS** (type ii), and finally **IOENALIS**. The decorative designs of **DONNAVCVS** and **IOENALIS**, with their stamps on the external base of their vessels, are so clearly contemporary that it is tempting to surmise that they worked at the same pottery centre and at the same period.

Much of this Sigillata has been ascribed to the early period of the East Gaulish Pottery of Luxeuil (Fölzer, pp. 3-7) and the discovery of a mould on that site (Fölzer, I, 1) indicates that some fabric of this type was made at that locality. On the other hand, the occurrence of two moulds of the so-called Luxeuil type at Vichy (Mus. St. Germain), the frequent incidence of the ram's-horn wreath on Sigillata found at Vichy and the not uncommon depiction of figure and ornamental types characteristic of Lezoux, suggest that Central Gaul played no unimportant part in the production of this class of pottery.

I wish to express my indebtedness to Dr. Felix Oswald for the drawings of the **RANTO**, **IOENALIS**, and Rottweil bowls; to Professor R. C. Bosanquet for the drawing of the Caersws vessel, and to Mr. J. A. Stanfield for the illustration of the Guildhall specimen.

ABBREVIATIONS

- Brecon.* *The Roman Fort near Brecon*, by R. E. M. Wheeler, with a section on Terra Sigillata or Samian Ware, by T. Davies Pryce and Felix Oswald.
- Brit. Mus. Cat.* British Museum, *Catalogue of Roman Pottery in the Department of Antiquities.*
- Déch. Déchelette, Joseph, *Les Vases céramiques ornés de la Gaule romaine.*
- Fölzer. Fölzer, E., *Römische Keramik in Trier. Die Bilderschüsseln der Ostgallischen Sigillata-Manufakturen.*
- Knorr *Rottenburg* 1910. *Terra-Sigillata Gefässe von Rottenburg-Sumelocenna.*
- Knorr *Rottweil* 1907. *Die verzierten Terra-Sigillata Gefässe von Rottweil.*
- Knorr B. und E. *Die Westpfälzischen Sigillata-Töpfereien von Blickweiler und Eschweiler Hof.*
- Miller. Miller, S. N., *The Roman Fort at Balmildy.*
- Richborough.* *Reports on the Excavation of the Roman Fort at Richborough*, by J. P. Bushe-Fox.
- Wroxeter.* *Reports on the excavations on the Site of the Roman Town of Wroxeter*, by J. P. Bushe-Fox.

A pax at Abergavenny

By R. E. M. WHEELER, D.Lit., F.S.A.

[Read 13th February 1930]

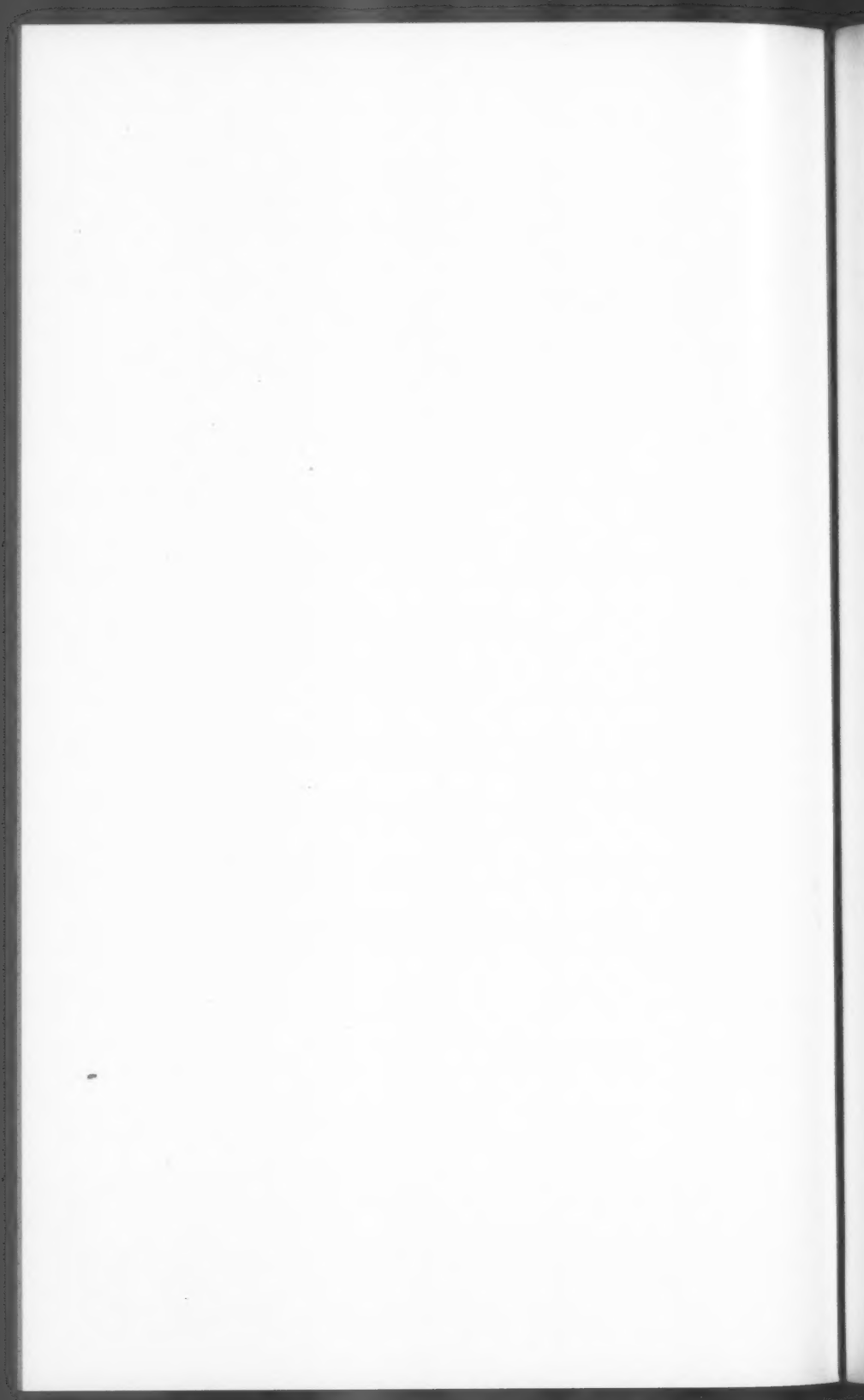
DR. JOHNSON thought that a pax was a pyx, and amended Shakespeare accordingly. Since the issue of the Dictionary, however, the pax has more than once been the subject of communications by Fellows of our Society,¹ and the 'Ignorance, madame, sheer ignorance' to which the Doctor might have pleaded would now be more difficult to excuse. Nevertheless, the salient features in the usage and history of the pax may perhaps be restated very briefly.

Following the injunction of St. Paul to the Corinthians, 'Greet ye one another with an holy kiss', the Kiss of Peace was included at an early date in the liturgy of the Christian Church. As defined by the Apostolic Constitutions and other customaries, the salutation of the Church by the bishop or presiding priest and the words 'Pax Domini sit semper vobiscum' were followed by the transmission of the holy kiss through the successive ranks of the clergy to the laymen and finally to the women, grade by grade. To-day the practice survives in the Roman Catholic church only in a modified form, at High Mass, where a formal salutation is interchanged amongst the officiating clergy. Amongst the laity the custom has long fallen into disuse, though when and under what circumstances is uncertain. It has been suggested that its intermission may have occurred at a time when the segregation of the two sexes at church-service went out of vogue, and when perhaps it was feared that a secular element might assert itself in this form of greeting. But this suggestion is not very helpful, since it is not known when the segregation of the sexes ceased to be customary, or whether, indeed, it ever was customary in certain provinces of the Church.

¹ Milner, *Archaeologia*, xx, 534 (the Wolverhampton pax); C. K. Watson, *Proc. Soc. Ant.*, 2nd Ser., viii, 504 (the New College pax); J. T. Fowler, *ibid.*, xx, 174 (pax now at Soc. of Antiquaries); P. Nelson, *ibid.*, xxv, 26 (pax now at British Museum); W. Page, *ibid.*, xxvi, 153 (bone pax from Lancashire); A. Way, *Arch. Journ.*, ii, 144 (the New College pax, etc.); and, above all, Nina Layard, *Arch. Journ.*, lxi, 120. For a photographic illustration of the New College pax, see Catalogue of Exhibition of College plate at Oxford, 1929.



A pax at Abergavenny



It is certain, however, that at some period in or prior to the thirteenth century the conveyance of the Kiss of Peace was modified by the use of an instrument known variously as the Pax-brede or Pax-board, *tabula pacis*, or *osculatorium*. This instrument, bearing a representation of a holy subject (often, but not necessarily, the Crucifixion), was carried round amongst the clergy and laity, in order of precedence, to receive the holy kiss. No mention of such an instrument seems to have been identified in any document prior to the Constitutions of Walter de Gray, archbishop of York, in 1250. Thereafter, references to it become increasingly frequent. It was not abolished at the Reformation, and its general disuse about the middle of the sixteenth century was due apparently to causes other than official discouragement. To-day it is used by the Roman Catholic church only on special occasions of state, or by religious confraternities.

In view of the former abundance of this instrument,¹ whether of wood, bone, latten, or precious metal, it is surprising to find how few English examples have survived. In 1904 Miss Layard was able to list only nine or ten. Two or three others have come to light in the interval,² and now one more, kindly brought to my notice by Mr. R. H. D'Elboux, is here illustrated for the first time through the courtesy of the Rev. A. P. Smith, of St. Michael's Church, Abergavenny.

This pax was, as Mr. D'Elboux informs me, found in 1865 in the cellar of the presbytery of St. Michael's Church (which, incidentally, contains an unusually large collection of pre-Reformation vestments),³ and has in recent years been restored to the church by the widow of the finder, who had been allowed to keep it. It is of copper gilt, and is in the form of a recessed oblong panel to which a crucifix and the figure of St. John are attached. The figure of St. Mary was still in position when the pax was discovered, but has since been lost. The background is diapered, and the top of the panel is, as often, enriched with cresting. The handle, formerly hinged on to the back, is missing.

The only feature which calls for comment is the unusual inclusion of a black-letter inscription on strips riveted to the framework. The top strip is missing, but the surviving por-

¹ As witnessed by church inventories in Suffolk (see Miss Layard's paper as cited), Northants (communicated to me by Miss Rose Graham), and doubtless in other counties.

² *Proc. Soc. Ant.*, viii, 504, and xxvi, 153.

³ See R. H. D'Elboux, *Arch. Journ.*, lxxxi.

tions show that the inscription took the form of two somewhat hesitant hexameters :

IN CRUCIS · HC · SPECIE · IHC · BN · MOSTT · IDEAM
 ALMA · BEAT · TUA · MUÑA · LAUDAT ·
 IHC · MARIA · IOHS ·

No close analogy to this inscription has been found, but of the various attempts which have been made to supply the missing portion, that of Mr. McNeil Rushforth is perhaps the most convincing. As completed by him the lines would read :

*In crucis hic (or hac) specie Jesus b(e)n(e) mo(n)st(ra)t ideam
 [Mortis, q(ua)m Maria] alma beat, tua mun(er)a laudat*

‘ Here, under the form of the Crucifix, Jesus clearly shows the fashion of his death, which gracious Mary accounts as blessed, (and) glorifies thy sacrifice.’

In the second line, *munera* is probably preferable to *vulnera*, although the latter is not an impossible reading.

Of the artistic merit of the pax, it can only be claimed that it is somewhat higher than that of others in the English series, most of which date from the end of the fifteenth or the beginning of the sixteenth century. The slim and not ungraceful figure of St. John on the Abergavenny pax conforms to an earlier tradition and is not likely to be later than the first half of the fifteenth century.

*Flint Implements of Upper Palaeolithic facies
from beneath the uppermost Boulder Clay
of Norfolk and Yorkshire*

By J. REID MOIR and J. P. T. BURCHELL, M.C., F.S.A.

[Read 3rd April 1930]

I

FLINT IMPLEMENTS OF UPPER PALAEOLITHIC TYPES
FROM GLACIAL DEPOSITS IN NORFOLK

By J. REID MOIR

IN the following paper a preliminary account is given of some archaeological research which is being carried out, under a grant from the Percy Sladen Memorial Fund, in the Hunstanton district of north-west Norfolk.

For many years past I have conducted investigations into the various glacial Boulder Clays of East Anglia and have recovered from them flint implements of different ages. The most ancient traces of glacial action in Suffolk and Norfolk—so far as the Pliocene and Pleistocene deposits are concerned—are to be found in the Suffolk Bone Bed beneath the Red Crag. In this accumulation, which I believe may represent in part a glacial deposit rearranged by marine action, there are to be found an appreciable quantity of transported 'erratic' rocks—some of considerable size—together with a number of flints exhibiting numerous and well-marked striations. Further, the fossiliferous 'Crag' which surmount the Bone Bed show, by the type of marine mollusca they contain, that at this time a sea, of which the temperature was progressively being lowered, swept over East Anglia, and, when the latest of the Crag beds (the Weybournian) was being laid down, had assumed an entirely boreal character.

In the Bone Bed beneath the Red Crag I have found very definite evidence of man's existence in the form of flint and bone implements, and these specimens, which were evidently made before the onset of the First Glacial epoch, I have classed as of pre-Palaeolithic types.¹ Following upon the submergence of East Anglia beneath the refrigerated sea of 'Crag' times, the land rose, and the period of the Cromer Forest Bed was

¹ *Proc. P.S.E.A.*, vol. 11, pt. 1, pp. 12-31, and other papers.

inaugurated. It was during this lengthened epoch, representing the First Inter-Glacial, that the whole evolution of the Chellean industry was carried out, and there appeared in Norfolk vast herds of animals, most of which have long since become extinct. The period of Chellean Man was brought to a close by the onset of the Second Glacial epoch, and to-day the deposits of the Forest Bed are found buried beneath the immensely thick accumulations laid down by an ice sheet which, originating in Scandinavia, crossed what is now the North Sea, and penetrated some distance into Norfolk.

In the glacial Till of the Cromer coast have been found examples of Chellean hand-axes derived from the Forest Bed¹ when this was cut into and removed by ice-action. It is highly probable that *pari passu* with the arrival in Norfolk of the Scandinavian glacier, another, of local origin, had advanced from the north of England and invaded East Anglia from the north-west. The deposit of this ice sheet is known as the Kimmeridgian Chalky Boulder Clay, and it is in lake-like hollows eroded in the surface of this clay that there are found beds rich in flint implements of Acheulean and of Early Mousterian types.² It is evident that this epoch was marked by a great amelioration of climate, and, so far as can at present be seen, represents the Second Inter-Glacial period. The next invasion of East Anglia by ice was from the north-west, and the deposits of this glaciation which, in places, overlie those of Acheulean and of Early Mousterian date, take the form of the Upper Chalky Boulder Clay which weathers to a peculiar shade of yellow, and of tumultuous beds of 'Cannon-shot' gravel. In these accumulations there are found derived examples of Acheulean and of Early Mousterian implements,³ many of which, as is common with stones in Boulder Clays, exhibit well-marked striations and abrasion.

Subsequently to the retreat of the ice of the Third Glacial epoch East Anglia was inhabited by races of people making flint implements of Upper Palaeolithic types, and definite 'floors', or occupation levels, of the Upper Mousterian and Aurignacian periods have been found in Suffolk.⁴ At certain sites, for instance, in a small dry valley to the north of Ipswich, Suffolk, these floors are covered by a considerable thickness of hill-wash, evidently laid down after a time of low temperature

¹ *Antiq. Journ.*, vol. iii, April 1923, no. 2, pp. 135-7.

² *Antiquity of Man in East Anglia* (Cam. Univ. Press), p. 61.

³ *Journal Royal Anthropol. Inst.*, vol. 1, 1920, January to June, pp. 135-52.

⁴ *Ibid.*, vol. xlvii, 1917, pp. 367-412.

when the surface soil was thawing and flowing gently down the existing slopes. Some years ago I published my opinion that the deposition of this hill-wash corresponded with the close of the last, or Fourth Glacial epoch in England,¹ and, as flint implements of proto-Solutrian forms were found in the hill-wash, I assigned this final effort of the Ice Age to some period after the Early Solutrian stage. Moreover, it seemed to me reasonable to suppose that if an actual ice sheet had been present at this period in, say, Yorkshire and Norfolk, that further south, beyond the periphery of the glacier, the temperature would be very cold, and give rise to the Arctic floras found in the Cam Valley² and at Ponder's End,³ and, upon the advent of warmer conditions, to the deposition of hill-washes—a type of accumulation to which insufficient attention has been given. Having arrived at these conclusions, I determined to carry out an investigation of the latest Boulder Clay, if such was to be found in East Anglia; and expected to find in it, as in the hill-washes to which reference has been made, derived implements of Upper Palaeolithic types. I have to thank my friend Professor Marr, F.R.S., for suggesting to me that an examination of the glacial deposits of Hunstanton, Norfolk, might furnish important evidence for the solution of the problem which I had set out to investigate, and accordingly, when the opportunity arose, I proceeded to the district named, and began my researches.

The geology of the Hunstanton area, and of the adjacent country around Fakenham, Wells, and Holt, is dealt with in two Geological Survey Memoirs,⁴ and in both of these there is mentioned and described a Boulder Clay which, by its position and constituents, was evidently associated in the minds of the surveyors with the well-known Late Glacial Hessle Clay of Lincolnshire and Yorkshire. There appears to be no reason for cumbering this paper with the numerous and definite statements, in the Memoirs mentioned, which show the above claim to be correct, but it may be well to set forth the general account of this Boulder Clay which appears on p. 86 of the Memoir by Whitaker and Jukes-Brown on 'The Geology of the Borders of the Wash'. This account is as follows: 'The Brown Boulder Clay and its Associated Deposits. The Boulder Clay which borders the northern coast (of Norfolk) differs from that which

¹ *Ibid.*

² *Proc. P.S.E.A.*, 1918, 20, p. 177.

³ *Nature*, vol. 85, p. 206.

⁴ 'The Geology of the Borders of the Wash' (1899), and 'The Geology of the Country around Fakenham, Wells and Holt' (1884).

covers the chalk to the southward, and closely resembles the upper Brown Boulder Clay in Yorkshire and Lincolnshire, which was called the Hessle Clay by Mr. Searles Wood, Junr. This clay of the northern border is generally of a reddish-brown colour with grey streaks and mottlings, and has fewer stones than the ordinary grey chalky clay. It has much less chalk in it, only small scattered pellets, or pebbles of chalk, and fewer flints; the commonest stones after these being fragments of basalt, of quartzite, and of red and yellow sandstones. In some places it includes or passes into a brown sandy brick earth. There are also associated beds of gravel and sand. Whether these brown clays and brick-earths are really a distinct formation of either earlier or later date than the inland Chalky Boulder Clay is a question which has not yet been decided. Mr. Woodward was unable to separate them in the sheet to the East (68) from the clays and loams of the contorted Drift Series, but in Lincolnshire they have been regarded as more recent than the Chalky Boulder Clay. In this sheet (69) Mr. Cameron has seen one case in which a reddish clay overlies a whitish clay (see p. 9); but, on the other hand, Mr. Reid observed that on the foreshore near Brancaster the red passed laterally into grey clay.' Further, on p. 87 of the same Memoir, it is stated: 'A long continuous tract of the reddish-brown Boulder Clay runs all the way from Brancaster to Hunstanton, a distance of six miles. It forms a sort of terrace between the marshlands of the coast and the slope of the bare chalk-land above. This Boulder Clay extends under the marshland, and is probably banked up against a steep slope or cliff of chalk on the south, just as the brown Boulder Clays of Lincolnshire are banked up against the buried cliff-line of the Lincolnshire Wolds. This continuous strip of Boulder Clay resembles the Hessle Clay of Lincolnshire and Yorkshire, not only in its colour and general characters, but also in the geographical position which it occupies.'

Again, on p. 90, Mr. Whitaker states: 'I now feel sure that Hessle Clay occurs at Hunstanton', and this opinion of so sane and experienced a geologist must carry great weight. On the other hand, Mr. Clement Reid, to whose accuracy in recording geological sections I can gratefully testify, states (p. 87) that 'In Brancaster Bay, at low water spring tides, the Boulder Clay was seen on the foreshore underlying the "submerged forest". Most of the clay was of a brown colour, like that of Hunstanton, but for a short distance this clay passed both laterally and vertically into lead-coloured, very chalky Boulder Clay'.

But in regard to this, I think it reasonable to suppose that

such a state of affairs might be brought about when an area, in which older Boulder Clay existed, was invaded by another ice-sheet. In fact, most of those who have made a study of the glacial deposits of East Anglia can no doubt recall instances where two beds of clearly different ages have coalesced in the manner described by Reid.

As regards the section described by Mr. A. C. G. Cameron in the Survey Memoir, which appeared to show two superposed Boulder Clays, it is stated (p. 79): 'He mentions another pit about three-quarters of a mile south of Burnham Deepdale as exposing "Boulder Clay which is red in the upper part and white below, and has numerous flints in it". If the red clay here is like the reddish (Hessle) clay of the low ground near Brancaster this section may be of some importance as showing the super-position of that clay on the chalky clay.'

Unfortunately, many of the section and pits mentioned in the Survey Memoir are not now visible, but in those I have examined, I have not yet seen the Brown Boulder Clay resting upon the chalky variety. In fact, so far, I have not come across any excavation in which the two Boulder Clays are visible. But, though this is the case, I have no doubt at all that in appearance and character the Brown Boulder Clay is very different from the other well-known Chalky Boulder Clays of East Anglia, and its archaeological contents certainly differ completely from those of the other Boulder Clays.

At the time when the Geological Survey of north-west Norfolk was carried out, in 1884 and in 1899, no one would have thought of looking for any works of man in Boulder Clay, but the flint implements now known to occur in these deposits are the only means we have of dating them, and when I proceed to do this from the artifacts found in the Brown Boulder Clay of Hunstanton I cannot hesitate in assigning it to late Pleistocene—Upper Palaeolithic—times.

The Brown Boulder Clay does not appear to have reached the high ground of north-west Norfolk, but it is present in force at lower levels, pointing, it would seem, to the fact that the glacier had about reached its most southerly limit, and was devoid of sufficient thickness to override the country as did its more powerful predecessors. The Brown Boulder Clay underlies the marsh beds round the north-west coast of Norfolk, and fig. 1, adapted from fig. 7 (p. 88) of the Survey Memoir, shows the relationship of the clay to these beds and the chalk. It appears, also, that the Brown Boulder Clay underlies the mass of the Fen beds, as, when the excavation for the docks at

Boston was carried out in 1882-4, Mr. Jukes-Brown noted the following section :

Clay and silt	18 ft.
Peat	1 ft.
White and grey sands	1 ft.
Reddish sand and gravel in pockets of the clay below	6 ft.
Mottled buff and grey boulder clay	

In January 1882 Mr. Whitaker visited the works of the new Witham Outfall, at the edge of the Wash below Boston. The large cutting showed Alluvium (silt) from 10 to 15 ft. thick, over Boulder Clay, the junction being even and horizontal where seen. The Boulder Clay was bluish-grey, mottled brown, and evidently comparable with the Brown Boulder Clay of Norfolk. If this clay indeed underlies the Fen beds, and is, as I believe, of Upper Palaeolithic age, then it follows, as had been imagined on other grounds, that most of these deposits must be of post-Palaeolithic date.

As is stated in the Survey Memoir (p. 86) the Brown Boulder Clay passes into a brown sandy brick-earth, and this in places contains 'race'. It is by no means easy to visualize the conditions under which such other transmutations took place, but here again I think it reasonable to suppose that, towards the end of a glacier, where water and ice must have been in close contact, very varied deposits would be deposited contemporaneously.

I have made a collection of some of the erratic rocks in the Brown Boulder Clay, and these have been examined and identified by Dr. H. H. Thomas, F.R.S., to whom I am grateful for his kindness.

Dr. Thomas's report upon these specimens is as follows :

Specimens from Hunstanton.

- 1 Coarse diorite. Probably Scandinavian or Scottish.
- 1 Red granite pegmatite.
- 1 Red line grained quartz-porphry.
- 2 Dolerites, very rotten. Probably north of England or Scotland.
- 2 Small specimens of grey chert. Probably Jurassic or Carboniferous.
- 2 Quartz grits, one with amethystine quartz. Probably Millstone grit of north England.
- 3 Pinkish quartzites. Probably derived and of considerable antiquity.
- 3 Grey green carboniferous sandstones. Quite possibly Yorkshire.
- 2 Schists, one quartzite the other chloritic. Scottish or Scandinavian.

There is very little indication of any derivation direct from a known source. The general impression, however, is that the material is from the north and north-east.

There is an absence of Cheviot material, such as is very abundant in the samples sent by Mr. Burchell from Yorkshire.

The three sites examined so far by me at Hunstanton are :
(1) the extensive exposure of Brown Boulder Clay to the south

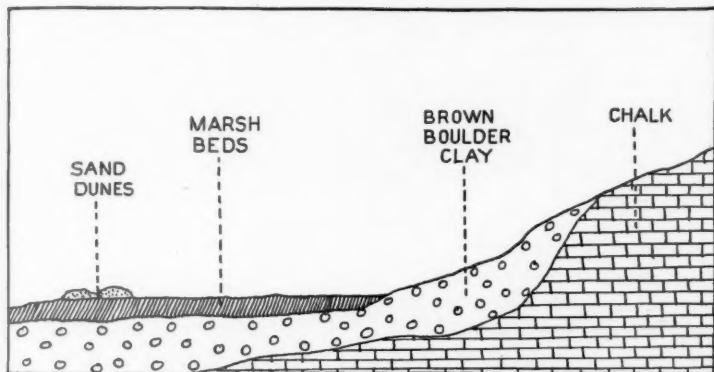


FIG. 1. Cross-section (not to scale) showing the relationship of the Brown Boulder Clay to the Chalk, Marsh Beds, and Sand Dunes

of the southern extremity of the Promenade ; (2) the large pit situated to the north-west of the Gas Works ; and (3) the cliff section at Old Hunstanton. At Sites nos. 1 and 3 the Boulder Clay is capped by Blown Sand. Regarding Site no. 1, the Survey Memoir states (p. 88) : ' At the southern end of the Hunstanton cliff the Carstone is overlain by a variable thickness (10 to 18 ft.) of Hesse Beds, mostly reddish-brown Boulder Clay, but containing lenticular beds of sand, and having a gravelly layer at the base where it rests on the Carstone.'

Regarding Site no. 2, the Survey Memoir states (p. 91) that, when the Survey was being made, two pits had been opened near the Gas Works. Only one of these is visible now, but in those days the exposed section showed about 30 ft. of loamy and stratified gravel and sand. Of these Mr. Lamplugh, who examined them, states (p. 91) that they are of the same age as the Brown Boulder Clay of the adjacent coast section (Site no. 1), which is situated about 300 yds. to the west. In one of these pits near the Gas Works a fragmentary human skeleton was

found in 1898 at a depth of a few feet from the surface. These remains were described by Mr. E. T. Newton, F.R.S., and regarded by him as of Palaeolithic Age.¹ So far as can be ascertained the human bones are in all probability preserved in the Educational Museum at Haslemere, Surrey, but, from the scanty information now available, it seems impossible to decide whether the specimens are of any great antiquity, or otherwise. In one of the pits near the Gas Works Mr. Lamplugh notes that beneath the top soil was 'Sandy Loam with scattered small pebbles of flint, etc., not arranged in layers—probably rain wash, 3 to 5 ft. (sometimes thicker in other parts of the pit)'. In the pit examined by me there is certainly a sandy loam exposed on the higher, eastern side. This loam contains numerous erratic rocks and some flaked flints, but I would hesitate in classing the whole of it as a rain-wash. The upper portion may be rearranged and of this description, but, if so, its constituents have been derived from the glacial deposits close at hand.

Regarding Site no. 3, the Survey Memoir states (p. 87): 'It (the Brown Boulder Clay) runs for a short distance up the valley of the little stream at old Hunstanton, and is also found on the western side of the alluvium between the sand-dunes and the chalk cliff.' It will thus be seen that each section, where I have found flint implements, was classed by the competent geologists who surveyed the area as of glacial origin, and with this conclusion I am in agreement. Further, every specimen I have found was *in situ* in the deposit, so there cannot remain any doubt as to these specimens having formed an integral part of the Brown Boulder Clay. The implements and flakes occur at varying depths in the clay, and evidently represent artifacts picked up by the ice and incorporated with the Boulder Clay which was then being formed. Up to the present I have found 120 specimens, 22 (or nearly 20 per cent.) of which exhibit striations. The majority of the scratched flints are of medium size, but some are of very small dimensions. A few burnt flints have been discovered in the Boulder Clay, and one rounded hammer-stone in flint. Actual finished implements are rare, but many of the flakes show signs, along their edges, of having been used. In my opinion the artifacts recovered are not all of the same age, but I have not yet found any implement in the Brown Boulder Clay which can be referred with certainty to any period older than the Upper Palaeolithic. I would expect to find in this deposit implements ranging from the Upper Mousterian

¹ *Proceedings Geol. Assn.*, vol. xv, p. 238 (1898).



FIG. 2. View of exposure of Brown Boulder Clay surmounted by Blown Sand ; Shore, South Hunstanton

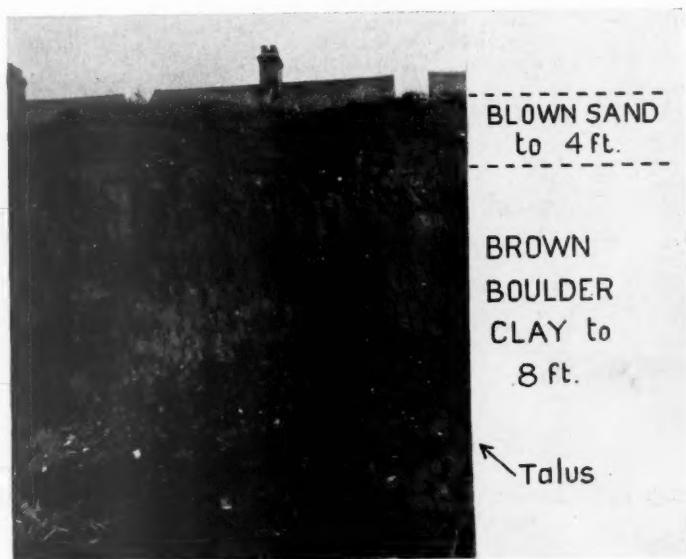


FIG. 3. Closer view of the Brown Boulder Clay and Blown Sand ; Shore, South Hunstanton



FIG. 4. Brown Boulder Clay overlying sand and gravel in pit near the Gasworks, Hunstanton



FIG. 5. Brown Boulder Clay to 8 ft. overlain by Blown Sand to 3 ft. and resting upon White Chalk : Cliff, Old Hunstanton

possibly to the Magdalenian epoch, and, while it may be that the specimens from north-west Norfolk are of the latter age, a sufficient number of definite implements has not yet been found to make an accurate diagnosis possible. They may be of Upper Aurignacian antiquity, but they differ markedly from those discovered by Mr. Burchell in Boulder Clay in Yorkshire. The latter are probably of the Upper Mousterian or Lower Aurignacian period, and bear a close resemblance to the implements found by me in the Lower Floor beneath hill-wash in Messrs. Bolton & Co's brickfield, Ipswich.¹

The section now to be observed along the shore at South Hunstanton, which I call Site no. 1, is shown in figs. 2 and 3, where Brown Boulder Clay to 8 ft. is surmounted by Blown Sand to 4 ft. The exposure of Boulder Clay extends for about one-eighth of a mile from the end of the Promenade southwards.

Site no. 2, in the pit near the Gas Works, is shown in fig. 4, where Brown Boulder Clay to 4 ft. is surmounted by surface soil (9 in.) and underlain by Glacial Gravel and sand of unknown depth.

Site no. 3, which is located in the cliff at Old Hunstanton, is shown in fig. 5, where Blown Sand to 3 ft. overlies Brown Boulder Clay to 8 ft. The latter deposit rests upon the white chalk, and is banked up against it in places. In the cliff above the Promenade, and below the public gardens, excellent sections of Brown Boulder Clay (up to 15 ft. in thickness) are to be seen, but very little searching for implements was possible at this spot, as the cliff face is very carefully preserved from damage.

The implements selected for illustration are the following:

Fig. 6. Provenance: six feet from surface in Brown Boulder Clay, Site no. 1, South Hunstanton. Material: greyish flint. Colour: whitish blue. Condition: unabraded, non-striated, no incipient cones of percussion. Type: push-plane.

Greatest length, $2\frac{3}{10}$ in. Greatest width, $2\frac{3}{10}$ in. Greatest thickness, $1\frac{3}{10}$ in. Approximate weight, $2\frac{3}{4}$ oz.

Fig. 7. Provenance: Brown Boulder Clay, Site no. 1, South Hunstanton. Material: greyish flint. Colour: dark grey. Condition: unabraded, fine parallel striations, no incipient cones of percussion. Type: double-ended scraper.

Greatest length, $2\frac{1}{10}$ in. Greatest width, $1\frac{4}{10}$ in. Greatest thickness, $\frac{3}{10}$ in. Approximate weight, $\frac{1}{2}$ oz.

¹ *Journ. Roy. Anthropol. Inst.*, vol. xlvii, 1917, pp. 367-412.

Fig. 8. Provenance: Brown Boulder Clay, Site no. 1, South Hunstanton. Material: black flint. Colour: bluish. Condition: unabraded, striated, no incipient cones of percussion. Type: simple burin, re-sharpened twice.

Greatest length, $1\frac{5}{10}$ in. Greatest width, $\frac{5}{10}$ in. Greatest thickness, $\frac{6}{10}$ in. Approximate weight, $\frac{1}{2}$ oz.

Fig. 9. Provenance: Brown Boulder Clay, Site no. 1, South Hunstanton. Material: grey flint. Colour: dove-grey. Condition: unabraded, non-striated, no incipient cones of percussion. Type: blade showing signs of use along edges.

Greatest length, $1\frac{9}{10}$ in. Greatest width, $\frac{7}{10}$ in. Greatest thickness, $\frac{2}{10}$ in. Approximate weight, $\frac{1}{8}$ oz.

Fig. 10. Provenance: Brown Boulder Clay, Site no. 2, South Hunstanton. Material: grey flint. Colour: grey. Condition: unabraded, non-striated, no incipient cones of percussion. Type: scraper on blade.

Greatest length, $1\frac{8}{10}$ in. Greatest width, $1\frac{1}{10}$ in. Greatest thickness, $\frac{4}{10}$ in. Approximate weight, $\frac{1}{2}$ oz.

Fig. 11. Provenance: Brown Boulder Clay, Site no. 2, South Hunstanton. Material: grey flint. Colour: light grey. Condition: unabraded, non-striated, no incipient cones of percussion. Type: core from which blades have been struck.

Greatest length, $2\frac{4}{10}$ in. Greatest width, $1\frac{4}{10}$ in. Greatest thickness, $1\frac{2}{10}$ in. Approximate weight, $2\frac{3}{4}$ oz.

Fig. 12. Provenance: Brown Boulder Clay, Site no. 2, South Hunstanton. Material: grey flint. Colour: mixture of light and dark grey. Condition: unabraded, striated, no incipient cones of percussion. Type: simple burin.

Greatest length, $1\frac{7}{10}$ in. Greatest width, $1\frac{5}{10}$ in. Greatest thickness, $\frac{4}{10}$ in. Approximate weight, 1 oz.

Fig. 13. Provenance: Brown Boulder Clay, Site no. 2, South Hunstanton. Material: grey flint. Colour: dark grey. Condition: unabraded, non-striated, no incipient cones of percussion. Type: push-plane.

Greatest length, 2 in. Greatest width, $1\frac{8}{10}$ in. Greatest thickness, $1\frac{3}{10}$ in. Approximate weight, $3\frac{1}{4}$ oz.

Fig. 14. Provenance: Brown Boulder Clay, Site no. 2, South Hunstanton. Material: grey flint. Colour: dove grey. Condition: unabraded, striated, no incipient cones of percussion. Type: blade with signs of use along edges.

Greatest length, $1\frac{8}{10}$ in. Greatest width, $\frac{7}{10}$ in. Greatest thickness, $\frac{2}{10}$ in. Approximate weight, $\frac{1}{8}$ oz.

The specimens found at Site no. 3, Old Hunstanton, are chiefly flakes, and, though of the same type as those from Sites nos. 1 and 2, need not be illustrated. In using the term 'Brown

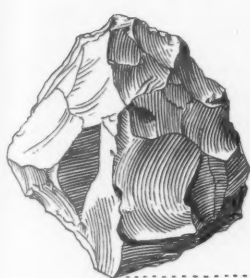


FIG. 6



FIG. 7

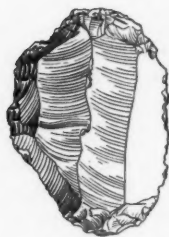


FIG. 8



FIG. 9



FIG. 10

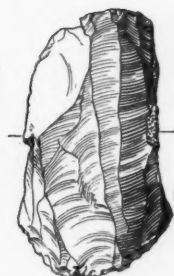


FIG. 11

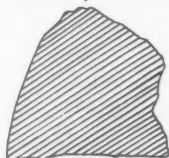


FIG. 13

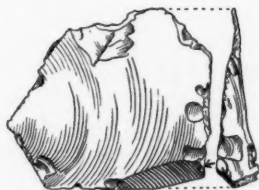


FIG. 12



FIG. 14

Implements from Glacial Deposits in Norfolk ($\frac{2}{3}$)
(for descriptions see pp. 367-8)

Boulder Clay' in the above descriptions of implements, I refer to any of the glacial deposits at the three sites at Hunstanton which are, without question, of the same age and laid down by the same ice sheet. There would also seem reason to believe that this glaciation is to be correlated with that which sealed in the implementiferous cave of Cae Gwyn in Wales.¹ There is not much doubt that the implements from this and the neighbouring cavern of Ffynnian Beuno are of Aurignacian and Early Solutrian Age. Thus, the Welsh glaciation, the deposits of which are strangely similar in their characteristics to those constituting the Brown Boulder Clay of north-west Norfolk, occurred in late Palaeolithic times, as did that with which this paper deals.

It represents the Fourth Glacial Epoch of East Anglia, and, though the ice did not apparently penetrate deeply into Norfolk, it was nevertheless—even in this southern area—of considerable extent. The fact of the occurrence of flint implements of Upper Palaeolithic types in the Brown Boulder Clay of Hunstanton makes it clear that the river terraces of pre-Upper Palaeolithic age in different parts of the country must be regarded as of either glacial or inter-glacial age. In a small valley at Heacham, about one mile to the south of Hunstanton, and on the north side of the road from that place to King's Lynn, the Brown Boulder Clay forms a terrace on either side. The surface of this terrace rests in its highest part at about 15 to 20 ft. above the valley floor, in which the chalk is exposed, and it is thus possible to realize the small amount of erosion that has taken place at this spot in post-glacial times. This amount in all probability exceeded the 15 or 20 ft. mentioned, as some thickness of Boulder Clay must have been removed from the valley before the existing terrace was formed, but, even when this fact is taken into account, the post-glacial erosion was clearly small. Though one or two flakes, clearly older than Upper Palaeolithic times, have been found in the Brown Boulder Clay, it is obvious that the most prevalent artifacts in this deposit are of the latter epoch. The humanly flaked specimens of any kind are very rare, and require, as do all artifacts in Boulder Clays, much patience in searching for them. From my extensive experience in the examination of these deposits, I have no doubt that, both in its nature and implementiferous contents, the Brown Boulder Clay of north-west Norfolk is clearly and fundamentally different from the other Boulder Clays of East Anglia. From the examination I have already made of the north-west portion of Norfolk,

¹ *The Upper Palaeolithic Age in Britain* (Oxford Univ. Press), pp. 111-17.

I conclude that it is of considerable importance in ascertaining the exact relationship of Upper Palaeolithic man to the latest glacial period of East Anglia, and I hope during the coming months of this year (1930) to continue my researches in this area.

I have to thank my friends, Mr. A. S. Barnes, Mr. J. P. T. Burchell, Mr. J. B. Calkin, and Mr. Guy Maynard, who have given me much help in my work, and who have themselves found implements and flakes embedded in the Brown Boulder Clay.

So far as I am aware, implements of Upper Palaeolithic types have never before been found in glacial deposits, and there cannot, I think, be any doubt that the discoveries to which these papers refer are of considerable significance in the unravelling of the past history of man upon this earth, and in enabling us to form an opinion as to the real age of certain flint artifacts found in many places upon the surface of the ground, and regarded usually as of Neolithic antiquity.

Upon a recent visit to the so-called 'esker' in Hunstanton Park, mentioned in the Survey Memoir ('The Geology of the Borders of the Wash'), I noted typical Brown Boulder Clay exposed in a small excavation in this formation. I am of opinion that this 'esker' is more probably to be regarded as a moraine of the glacier which laid down the Brown Boulder Clay.

II

UPPER PALAEOLITHIC IMPLEMENTS FROM BENEATH THE UPPERMOST BOULDER CLAY OF FLAMBOROUGH HEAD

By J. P. T. BURCHELL

WHEN my friend J. Reid Moir informed me of his discovery of Upper Palaeolithic implements at the base of, and scattered throughout, the uppermost or 'Hessle' Boulder Clay of north-west Norfolk, I was immediately impressed by the possibility of far-reaching developments if this discovery were pursued to its logical conclusion.

I therefore determined to further his researches by examining that part of Yorkshire which had been surveyed geologically with great care by Lamplugh, Dakyns, Fox-Strangways, and Clement Reid, all of H.M. Geological Survey; and which, for the past fifty years, had been the stronghold of English monoglacialisists. It includes the districts of Flamborough Head and

Holderness, where evidence of intense glaciation is plainly discernible. The sequence of the glacial deposits is exceptionally well recorded in these areas, and consists in descending order of:

8. 'Hessle' Boulder Clay;¹
7. 'Hessle' and Sewerby Gravels, Sands, and Loams;²
6. Upper Purple Boulder Clay;³
5. Gravel, Sands, and Loams of the 'Intermediate Series' as at Kelsey Hill and Burstwick, etc.;⁴
4. Gravels, Sands, and Loams of the Brandesburton—Barmston—Beacon Hill—Speaton terminal moraine;⁵
3. Lower Purple Boulder Clay;⁶
2. Laminated Clays of Bridlington and elsewhere;⁷
1. Basement Boulder Clay.⁸

During the Pleistocene period the north of England was influenced by three distinct sources of glaciation, viz. the Teesdale glaciers; the Scandinavian ice sheet; and the Scottish ice sheet. Whilst the development of the Teesdale glaciers progressed, the bed of the North Sea was rapidly filling with ice owing to the continuous extension of the Scandinavian ice sheet.

At Flamborough Head and in Holderness a study of the lower portion of the Basement Boulder Clay shows this deposit to be the direct result of invasion by Scandinavian ice, for it contains masses of sea-bottom material, shore-rounded pebbles, and small boulders of Scandinavian rocks—basalt, rhomboporphry, augite-syenite, and other coarse-grained rocks.

¹ *The Geology of Holderness, Mem. Geol. Survey, 1885, p. 27; The Geology of Yorkshire, Kendall and Wroot, 1924, pp. 470-1.*

² *The Geology of Holderness, Mem. Geol. Survey, 1885, pp. 27 and 46; The Geology of Bridlington Bay, Mem. Geol. Survey, 1885, pp. 9-10; Quart. Journ. Geol. Soc., Lamplugh, 1891, vol. xlvii, pp. 393 and 395-6.*

³ *The Geology of Holderness, Mem. Geol. Survey, 1885, p. 27; The Geology of Yorkshire, Kendall and Wroot, 1924, foot-note p. 469.*

⁴ *The Geology of Holderness, Mem. Geol. Survey, 1885, pp. 39, 46, and 54-6; The Geology of Yorkshire, Kendall and Wroot, 1924, pp. 469, 470, and 584-5.*

⁵ *Rep. Brit. Assn. (Manchester) 1887, Carvill Lewis, p. 692; The Glacial Geology of Gt. Britain and Ireland, Carvill Lewis, 1894, pp. 28-9 and 213; Quart. Journ. Geol. Soc., Lamplugh, 1891, vol. xlvii, pp. 398 and 418-19.*

⁶ *The Geology of Yorkshire, Kendall and Wroot, 1924, pp. 469-70.*

⁷ *Proc. Geol. Soc. Yorkshire, Lamplugh, 1882, n.s., vol. viii, p. 27; The Geology of Holderness, Mem. Geol. Survey, 1885, p. 45.*

⁸ *The Geology of Yorkshire, Kendall and Wroot, 1924, pp. 468-9.* The succession, in descending order, of 'Hessle' Boulder Clay, Upper Purple Boulder Clay, Lower Purple Boulder Clay and Basement Boulder Clay is clearly set out in Lamplugh's paper 'On the Drifts of Flamborough Head' (*Q. J. G. S.*, 1891, vol. xlvii, pl. xiii, Figs. 2, 3, and 15), and in the Memoir of the Geological Survey on Holderness by Clement Reid (1885), p. 8.

The upper portion, however, reveals that at this stage the Teesdale glaciers had coalesced with the Scandinavian ice sheet, since the erratics consist of large boulders of Scandinavian rocks, with the addition of carboniferous rocks, small boulders of Shap granite, Borrowdale lavas, and Threlkeld micro-granite.

In the Lower Purple Boulder Clay there is evidence that the Scandinavian ice sheet had become displaced as a result of the increased strength of the Teesdale glaciers, for the size and numbers of the Scandinavian erratics it contains indicate that they had been appropriated from the underlying Boulder Clay, whereas there is an abundance of large boulders of Shap granite, Whin Sill, Mountain limestone, and other carboniferous rocks.

The terminal moraine of this Purple Boulder Clay runs through Brandesburton, Barmston, Beacon Hill, and Speeton. Then followed a retreat of the ice, during which period the Gravels, Sands, and Loams of the 'Intermediate Series' were laid down. At Kelsey Hill, Burstwick, and at other localities in the neighbourhood, these deposits contain the remains of *Elephas primigenius*, *Rhinoceros leptorhinus*, *Bison priscus*, *Cervus tarandus*, and *Trichechus rosmarus*.

These conditions were succeeded by a recurrence of the glaciers, brought about by the readvance of the Teesdale glaciers, when the Upper Purple Clay was deposited. Once again the ice retreated, and, during the ensuing interglacial period, the 'Hessle' and Sewerby Gravels, Sands, and Loams were formed. After this, the final advance of the glaciers took place, but with ice coming chiefly from a different source, since the Boulder Clay, which is the result of this glaciation, contains an abundance of erratics, mostly small in size, and derived from the Tweed valley and the Cheviot Hills. Conspicuous among these erratics are Scottish porphyrites and Silurian grit. The 'Hessle' Boulder Clay of the North British and Scottish ice sheet is foxy-red in colour, often irregularly fissured, and penetrated with markings of blue. On Flamborough Head the best characteristic of this Boulder Clay, apart from that afforded by a study of the erratics it contains, 'is the presence in it of irregular-shaped fragments of chalk, not abundant, but sufficiently so to make a marked contrast with the chalkless upper portion of the Purple Boulder Clay'.¹

The following is a description of the stratified archaeological finds I have made at various localities in East Yorkshire

¹ *Quart. Journ. Geol. Soc.*, Wood and Rome, 1868, vol. xxiv, p. 150.

situated at the base of, and extending up into, the uppermost 'Hessle' Boulder Clay.

Danes Dyke.

This section has been fully described and figured by Lamplugh.¹ The glacial sequence, in descending order, is :

5. Boulder Clay (weathered) ;
4. Sewerby Gravels, Sands, and Loams ;
3. Boulder Clay ;
2. Gravels, Sands, and Loams of the 'Intermediate Series' ;
1. Basement Boulder Clay.

The uppermost Boulder Clay, which reaches a thickness of 4 ft. 6 in., is of an earthy nature, brown in colour, and weathered; it contains an abundant supply of small-sized erratics, largely comprised of North British and Scottish rocks derived from the Tweed valley and the Cheviot Hills. Chalk fragments are scattered freely throughout the deposit.

Resting upon the surface of the underlying Sewerby Gravels, and extending up into the weathered Boulder Clay, occur the remains of a human industry consisting of flint artifacts. The implements may be classified as follows: tortoise-cores, both struck and unstruck; Levallois-flakes and flakes with faceted butts; gravers; scrapers; points; core-scrapers and cores. These specimens, many of which are striated, are for the most part unabraded and unpatinated. Some, however, exhibit a bluish tinge, which in a limited number of instances develops into a white, porcellaneous patination. Several of the implements have been calcined, whilst burnt flints may often be found. In places at the base of the uppermost Boulder Clay, there occurs a black band a few inches thick, which chemical analysis has proved to be a former land-surface, which according to archaeological evidence dates from Upper Mousterian times. This same feature may be observed at Burstwick and at Kelsey Hill, where a similar weathered Boulder Clay may be seen. Clement Reid in his description of the latter says:—'The Boulder Clay overlying the gravel at Kelsey Hill ballast pit, near Keyingham Station, on the Hull and Withernsea line, is so much weathered, though nearly 13 feet thick, that for a long time I felt uncertain whether it was anything but rain-wash. The common occurrence of flints in it seems, however, to show that originally the deposit was a chalky Boulder Clay; but all,

¹ *Quart. Journ. Geol. Soc.*, Lamplugh, 1891, vol. xlvii, p. 396 and pl. xiii, fig. 5.

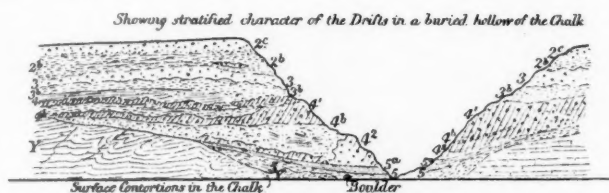


FIG. 1. Cliff-Section at Danes Dyke

CLASSIFICATION OF THE DRIFTS

- | | |
|---|----------|
| 1. Alluvial wash, freshwater marls, &c. | Recent. |
| 2 b, 2 c. Late-Glacial gravels, brick-earth and Boulder-clay. | Glacial. |
| 3, 3 a. Upper Boulder-clay. | |
| 3 b, 3 c. Intermediate Series; stratified beds, with bands of Boulder-clay. | |
| 4. Basement Boulder-clay. | |
| 5. Chalky Rubble. | |
| A, B, C. 'Infra-Glacial' beds of Sewerby and Speeton. | |

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The flint implements reproduced in figures 1, 2, 3, 4, 5, and 6, which form the subject of this paper, were discovered *in situ* at the base of, and extending up into, the deposit marked 2 c which the late Mr. G. W. Lamplugh classified, on geological evidence, as of Late Glacial age.



FIG. 2. Weathered Boulder Clay capping Sewerby gravels, Danes Dyke, eastern slope



FIG. 1. Weathered Boulder Clay capping Beacon Hill and resting on
(left) Gravels of Intermediate Series: (right) Upper
Purple Boulder Clay



FIG. 2. Weathered Boulder Clay capping Beacon Hill, eastern slope



FIG. 1

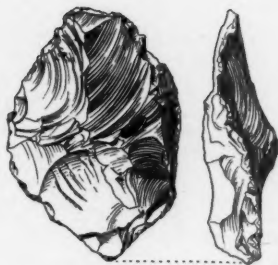


FIG. 2



FIG. 3

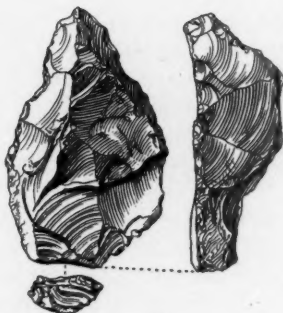


FIG. 4



FIG. 5



FIG. 6

FIGS. 1-6. Implements from weathered Boulder Clay, Danes Dyke (3)
 1. Core with dressed under-surface. 2. Twisted ovate hand-axe.
 3. Side scraper. 4. Nosed implement with faceted butt. 5. End-
 scraper and side-scraper on blade. 6. Point

or nearly all, calcareous matter having been dissolved out, it is now simply a stony loam or brick-earth.'¹

Beacon Hill.

The site has been frequently examined and described, and its importance in glacial geology cannot be overrated. Lamplugh,² who figures and gives full details of it, says: 'The conspicuous mound-like feature, known as Beacon Hill, stands, as already mentioned, at the southern end of the chain of kame-like hillocks. Its structure is admirably revealed in the cliff-section; and the arrangement of the beds in it closely resembles that seen in many of the Holderness mounds, to which its likeness is indeed more striking than in the case of any of the mounds further north. We find from the cliff-section that the surface feature is not due to any increase in the height of the Chalk, but that it is entirely caused by the exaggerated development of the stratified beds of the drift. Above the Chalk, there is the Basement Clay, not much thicker than usual, with occasional fragments of marine shells. In its upper portion this clay exhibits, in places, signs of passage into the overlying stratified beds, so that no sharp line can be drawn between them. These stratified beds, which in the heart of the mound have a total thickness of over 80 ft., consist, in the lower part, of tough laminated clay and warp, passing upwards into strongly cross-bedded and faulted sands with fine gravel, while in the upper portion of the hill the gravels predominate. A few small shell-fragments, of the same species as those that occur in the Basement Clay, may be picked out of the gravel, but the fine sand and warp contain no fossils whatever. In the middle of the hill these stratified beds come quite to the surface, but on either flank they are overlapped by a reddish Boulder Clay, which rises higher on the eastern slope than on the western. This is essentially the structure of all these mounds, whether on Flamborough Head or in Holderness, in spite of great variation of detail—a Lower dark Boulder Clay, an 'Intermediate series' of more or less stratified material, and an Upper brown or red Boulder Clay often discontinuous over the crest. In descending the eastern slope of Beacon Hill, the overlapping Boulder Clay thickens so rapidly that in less than 200 yards it has replaced or cut out the greater portion of the stratified beds,

¹ *The Geology of Holderness, Mem. Geol. Survey, 1885, p. 39.*

² *Proc. Geol. Soc. Yorkshire, Dakyns, 1880, n.s., vol. vii, pp. 246–52; The Geology of Bridlington Bay, Mem. Geol. Survey, 1885, p. 8; The Glacial Geology of Gt. Britain and Ireland, Carvill Lewis, 1894, p. 213.*



FIG. 7

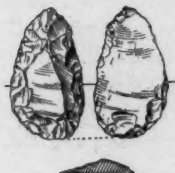


FIG. 8

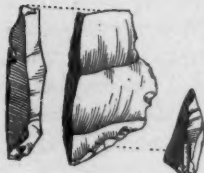


FIG. 9

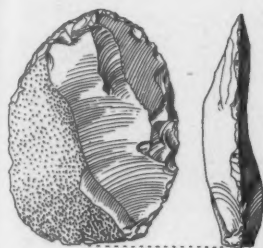


FIG. 10

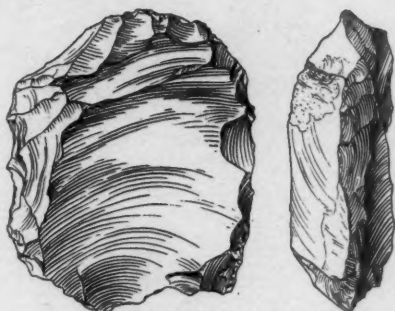


FIG. 11



FIG. 12



FIG. 13



FIG. 14

FIGS. 7-14. Implements from weathered Boulder Clay, Beacon Hill (3)
 7. Notched point of proto-Solutrian form. 8. Point of proto-Solutrian
 form. 9. Graver of Aurignacian form. 10. Point showing white por-
 cellaneous patination. 11. Struck tortoise-core. 12. Point. 13. Notched
 end-scraper. 14. Graver of Aurignacian form

leaving only a gravel band a few feet in thickness: and before reaching the little bay of South Sea Landing even this has disappeared, the two Boulder Clays seeming to merge, in an obscure section, into one inseparable mass.¹

My own observations not only fully confirm this description, but carry it one stage further, for the 'Upper Boulder Clay'



FIG. 15



FIG. 16



FIG. 17

FIGS. 15-17. Implements from weathered Boulder Clay, Beacon Hill (3)

15. Wedge-shaped scraper. 16. Core. 17. Knife with battered blade

of Lamplugh is clearly divisible into two portions, as is proved by a study of the deposit itself, and by archaeological evidence.

An examination of the 'Upper Boulder Clay' reveals a lower part resting upon the denuded edges of the Gravels, Sands, and Loams of the 'Intermediate Series', and consisting of an earthy Boulder Clay, reddish-brown in colour, characterized by vertical partings, which reaches 4 ft. 6 in. in thickness. There is an extreme scarcity of erratics (some of which, however, attain large dimensions), and a total absence of chalk fragments. The upper portion, on the other hand, consists of a weathered Boulder Clay, extending to about 8 ft. in thickness, of a still more earthy nature, brown in colour, also characterized by vertical partings, but

¹ *Quart. Journ. Geol. Soc.*, Lamplugh, 1891, vol. xlvii, p. 398 and pl. XIII, fig. 6.

charged with an abundance of small-sized erratics, largely of North British and Scottish rocks, derived from the Tweed valley and the Cheviot Hills. There occurs, in addition, a profusion of chalk fragments. Towards the centre of Beacon Hill this upper portion lies directly upon the surface of the Gravels, Sands, and Loams of the 'Intermediate Series' across the denuded edges of the lower part of the 'Upper Boulder Clay'. There is in these sections, at the present time, no evidence of a gravel parting between the upper and lower portions of the 'Upper Boulder Clay', corresponding with the Sewerby Gravels. The uppermost Boulder Clay deposit at Danes Dyke is identical with the upper part of the 'Upper Boulder Clay' on Beacon Hill.

Resting upon the surface of the lower portion of the 'Upper Boulder Clay', or, when that is absent, upon the surface of the Gravels, Sands, and Loams of the 'Intermediate Series', and extending up into the upper portion of the 'Upper Boulder Clay', there may be observed a flint implement culture similar to that at Danes Dyke. Calcined flints are likewise to be found in this deposit.

South Sea Landing.

Of the section exposed immediately to the east of the inlet, Lamplugh says: 'Capping the section we have a thick mass of brownish Boulder Clays much more homogeneous in character than the lower bed. The thickness of this clay is about 25 ft., but in one or two places a band of pebbles occurs 6 or 7 ft. from the top of the cliff, which may indicate a line of division. This upper clay is perhaps on the whole the most constant factor of the glacial series of Flamborough Head, though it thins away rapidly and disappears in one or two places as over the flanks of the above-mentioned great sand and gravel mound at Beacon Hill.'¹

In view of the archaeological discoveries at Danes Dyke and Beacon Hill I made careful examination of the uppermost portion of the 'Upper Boulder Clay', namely, that situated above the line of division noted by Lamplugh. I found this part of the Boulder Clay similar to that at both the other sites; the only differences being that it is of a more clayey consistency and contains slightly fewer erratics. North British and Scottish rocks derived from the Tweed valley and the Cheviot Hills are the characteristic erratics of this deposit. Above the level of

¹ *Geol. Mag.*, Lamplugh, 1890, n.s., Dec. 3, vol. vii, p. 63.

the line of division (which I would correlate with the Sewerby Gravels) I found in the Boulder Clay two small flint flakes, one of which was of the Levallois type and possessed a faceted butt.

Barmston.

Half-way between Barmston and Lisset, and situated on the south side of the road, is a hillock now being worked for gravel and sand. Capping these Gravels and Sands is a deposit of weathered Boulder Clay, 7 ft. in thickness, identical with the uppermost Boulder Clay of Danes Dyke and the upper portion of the 'Upper Boulder Clay' of Beacon Hill. In texture it is earthy, and its colour brown. It contains an abundance of small-sized erratics, consisting largely of North British and Scottish rocks derived from the Tweed valley and the Cheviot Hills; and there occur, scattered freely throughout, a number of chalk fragments.

The chalkless, lower portion of the 'Upper Boulder Clay' of Beacon Hill was nowhere discernible. I found several flint flakes resting upon the surface of the Gravels and Sands (the 'Intermediate Series') and passing up into the overlying Boulder Clay.

That this hillock belongs to the terminal moraine of the earlier Teesdale ice sheet seems to be generally accepted. Lamplugh, in his description of this area, says: 'Hamilton Hill, near Barmston, a conspicuous feature in the low land within a few hundred yards of the coast, about three miles south of Bridlington, seems to be now the most northerly of the Holderness mounds, though I think there is evidence that others have existed still nearer to Bridlington, and have been destroyed by fluvial action and by encroachments of the sea, which have once linked Beacon Hill or Potter Hill to the Holderness range. From Barmston the line may be followed inland by Stonehills, Gransmoor, Keik, Brigham, Frodingham, and Brandesburton. The structure of the mounds is evidently everywhere similar to that of Beacon Hill. They are based on Boulder Clay, and their flanks wrapped by an Upper red Boulder Clay which generally thins out before reaching the crest of the hill.'¹

It has been demonstrated that the type erratics of the uppermost Boulder Clay at the sites described above consist of North British and Scottish rocks, derived from the valley of the Tweed and the Cheviot Hills, thereby identifying this Boulder Clay

¹ *Quart. Journ. Geol. Soc.*, Lamplugh, 1891, vol. xlvii, pp. 418-19.

with the last glaciation of Yorkshire. These erratics comprise basalts and dolerites from S.E. Scotland, gneissose and schistose rocks of Scottish or Scandinavian derivation, dull-red felspathic sandstones similar to the Old Red Sandstone of Scotland, porphyrite from the Cheviot Hills, Mill-Stone grit, Carboniferous sandstones from Northumbria and Yorkshire, grey grits, possibly Ingletonian or Lower Palaeozoic, rhyolites, diorites of northern derivation, and an occasional example of rhomboporphry from Scandinavia.

From an examination of the flint implements recovered from beneath the uppermost, or 'Hessle' Boulder Clay, at Danes Dyke and Beacon Hill, it will be seen that the type specimen of the industry there represented is the Levallois flake with faceted butt, whilst the finished implements consist of hand-axes, graters, scrapers, points, and nosed and spurred pieces.

This assemblage, both in technique and in form, is clearly Upper Palaeolithic, and I would attribute the industry to Upper Mousterian times. The current opinion among geologists concerning the relationship of the Upper Palaeolithic cultures to the glacial sequence is aptly summarized by Professor J. K. Charlesworth, who says: 'This Newer Drift, which probably marks the culmination of the cold of the Glacial Period in Britain, is shown to be of Early Magdalenian age by the collective evidence of the Upper Palaeolithic implements from the Creswell and Cae Gwyn caves, the Chalky Boulder Clay of East Anglia, and the terraces of the Thames. It was preceded by the "Aurignacian Oscillation", the minimum extent of which is gauged by the distribution of the bones and teeth of the Pleistocene mammalia in the drifts and caves of the North of England.'¹

Now, archaeologists are essentially in agreement with this statement; that is to say, they recognize that the last culture phase of the Palaeolithic period coincided with the last glacial phase of the Pleistocene glaciation, and that in Yorkshire this ice movement originated in North Britain and Scotland.

From the foregoing evidence it will be seen that the implements I have recovered from beneath the uppermost Boulder Clay at Danes Dyke and Beacon Hill should be relegated, upon typological, stratigraphical, and geological evidence, to the 'Aurignacian Oscillation'; and, in this respect, they offer a parallel to the Cae Gwyn finds.

Earlier in the paper I have stressed the importance of Beacon Hill to our knowledge of glacial geology; and it is due to the

¹ *Quart. Journ. Geol. Soc.*, Charlesworth, 1929, vol. lxxxv, p. 355.

evidence I have discovered on this site that I am at issue with Professor Charlesworth concerning the position of the end-moraine of the latest phase of the Newer Drift in Yorkshire. Professor Charlesworth says that the course of this moraine is now 'thanks to the labours of a number of glacialists, well established. . . . The moraine rises above the plain of Holderness as a chain of low conical mounds, and extends parallel with, and at a short distance from, the eastern side of the Yorkshire Wolds by Brandesburton, North Frodingham, Kelk, and Hilderthorpe. The moraine builds a gravel-ridge on Flamborough Head, and is traceable from Beacon Hill to Sanwick, and through Speeton to Reighton, whence it descends into the Vale of Pickering at Muston and Gristhorpe.'¹

As has already been shown, the stratigraphical sequence at Beacon Hill in descending order is as follows:

5. An uppermost weathered Boulder Clay, containing an abundance of small-sized erratics derived largely from North Britain and Scotland, and many chalk fragments.
4. An occupation 'floor' containing flint implements of Upper Palaeolithic facies.
3. A Boulder Clay, containing few erratics and no chalk fragments, deposited during the readvance of the Teesdale glaciers, i. e. the Upper Purple Boulder Clay.
2. The Gravels, Sands, and Loams of the terminal moraine coincident with the deposition of the Lower Purple Boulder Clay of the earlier advance of the Teesdale ice sheet.
1. The Basement Boulder Clay of the Scandinavian and Teesdale glaciers.

On the above evidence the Brandesburton-Speeton terminal moraine cannot, it would seem, represent the end-moraine of the latest glacial phase of the Pleistocene period as Professor Charlesworth would have us believe.

I should like to take this opportunity of expressing my thanks to the Trustees of the Percy Sladen Memorial Fund and the Council of the Society of Antiquaries of London for the financial assistance they have given to this research; and also to Dr. H. H. Thomas, F.R.S., of H.M. Geological Survey, for the report he has drawn up on the erratics derived from the uppermost Boulder Clay of the sites described in this paper.

¹ *Quart. Journ. Geol. Soc.*, Charlesworth, 1929, vol. lxxxv, p. 337.

ADDENDUM.

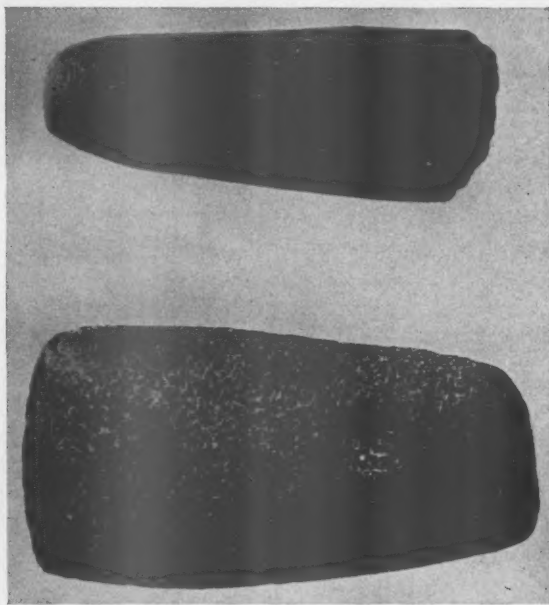
Since the above paper was read Messrs. Dewey and Bromehead, of H.M. Geological Survey, have made an official examination of the sites in question, and I am authorized by Mr. H. Dewey to make the following statement:—

‘Messrs. Dewey and Bromehead, of H.M. Geological Survey, have just completed an official examination of the sites under consideration, and, from the sections north of Bridlington, they have removed, with their own hands, numerous implements from the base of what they consider to be a deposit of late Pleistocene age.

19th May, 1930.’

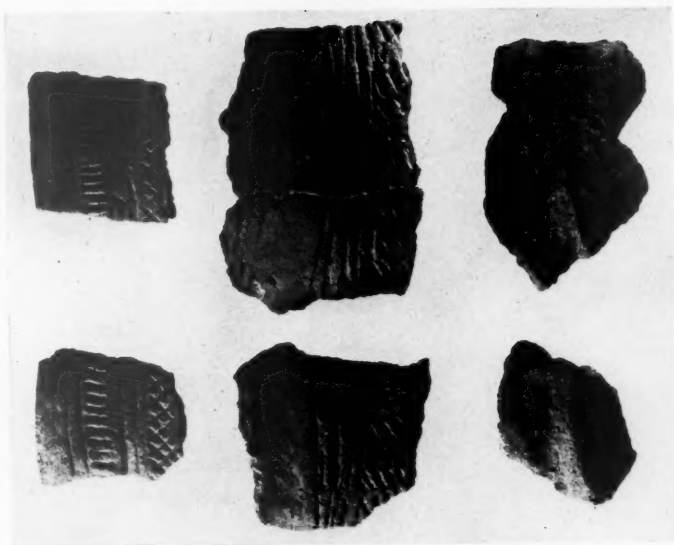
Notes

Beakers from Huntingdonshire.—Mr. Tebbutt of St. Neots reports that, in a collection formerly the contents of the Victoria Museum, but now warehoused at St. Neots, he found a box of potsherds and human bones.



Polished stone axes from Huntingdonshire (2)

They were labelled as found in 1889 by Mr. Harvey in his gravel pit, the Conygear, Eynesbury, St. Neots. The pottery fragments belonged to two Bronze Age beakers (pl. lvi). The bones he submitted to Sir Arthur Keith, to whom he is indebted for the following information: 'Of the cranial fragments I can say nothing except that they are human and unusually mineralized. The femur is of a young person, possibly a woman. The upper part of the thigh bone is flattened, as is often the case in Beaker people.' He inquired of Mr. A. Harvey of St. Neots, who still owns the site, for further information, and learnt that during the gravel digging there had been several such finds of human bones, ornamented pottery, and other objects. All trace of these has disappeared except the two polished stone axes illustrated, which were in Mr. Harvey's possession. The larger is a very beautiful and perfect specimen showing considerable use as a hammer at the butt end. The smaller is less perfect,



b

Remains of beakers from Huntingdonshire: *a*, 1, 2; *b*, 3



a



and looks like a water-rolled pebble of convenient shape ground to make an axe.

Dr. Tilley of Cambridge kindly identified the larger as coarse dolerite and the smaller as metamorphosed clay slate. The site is shown on the six-inch ordnance map Huntingdonshire Sheet XXV, S. E., 1927 edition. It is in Eynesbury parish in the field immediately south of Montague Square, and east of two fields over which are printed 'Roman coins and pottery found'. The field, which is 200 yards from the river Ouse, is now on a lower level than its surroundings, having had all the gravel dug out. This points to a cemetery of the Beaker folk at Eynesbury. Beakers are found round the edge of the Fens and on the Fen islands; and evidence of their penetration inland by the Ouse valley and its tributaries is accumulating. Mr. B. Lowerison found part of a beaker at Houghton, Hunts., in the Ouse valley (see *Peterboro' Advertiser*, 16th May 1930), and a fine example from Shefford, Beds., on the Ivel, is in Huntingdon Museum.

Roman Remains at Walltown, Neen Savage.—The following account is communicated by Mr. T. C. Cantrill, late of the Geological Survey. On the Bridgnorth road at a point some two miles north-east of Cleobury Mortimer, in south-east Shropshire, the Ordnance Survey one-inch map (Sheet 55 N.E.) of 1832 shows a rectangular earthwork enclosing the farmhouse of Walltown, but gives no indication that the work is an antiquity. The Ordnance Survey six-inch map (Shropshire 73 S.E.), published about 1890, engraves the earthwork and names it INTRENCHMENTS in the type indicative of Roman remains.

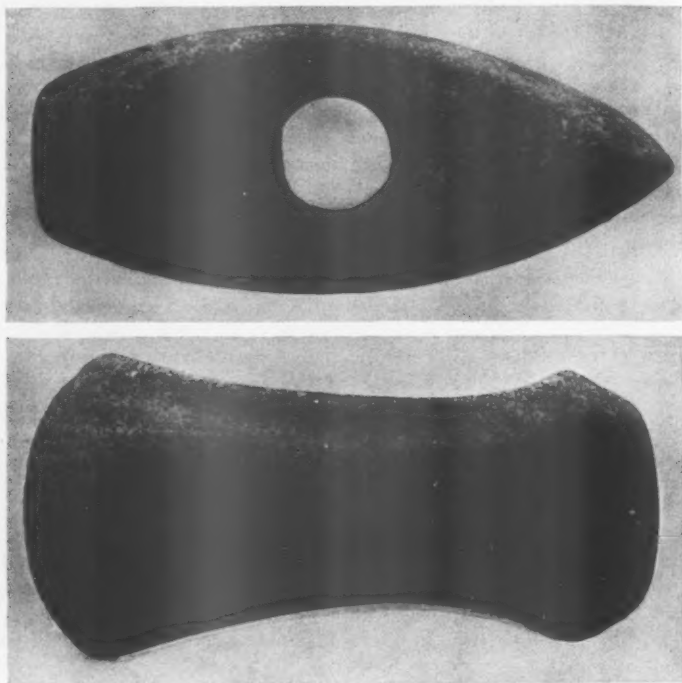
The earthwork is a rectangle with rounded corners and is about 175 yds. long and 150 yds. wide; the long sides run slightly west of north and east of south. There may have been an annexe outside the north-west angle. A road seems to have bisected the camp along its short axis. The modern highway enters the camp at the south-west angle, falls into line with the bisecting axis, passes through the eastern defences, and then resumes its north-easterly course.

Some road widening within the area of the camp, carried out in October 1929 by the County Council, has now afforded definite proof that the work is Roman and that it contained a permanent building roofed with well-burnt red tiles (*tegulae* and *imbrices*); and a piece of flue-tile suggests a hypocaust. Numerous sherds of coarse red pottery and one of black ware, put aside by the workmen, have been examined by Mr. C. F. C. Hawkes, who is of opinion that they can all be attributed to the latter part of the first or early second century A. D.

Axe hammer from the Fens.—The following account of a discovery is communicated by Mr. F. M. Walker of Manea.

The axe hammer illustrated is of a somewhat rare type, and was found on one of the Fen islands of North Cambridgeshire, in direct association with an urn containing calcined bones, burnt stones, charcoal, etc. The urn fragments were scattered by the gravel-diggers, but some were retrieved and have been reconstructed. They show an urn of a computed diameter

of fourteen inches. One small piece showed the usual string decoration, and of the reconstructed portions, a slight shoulder is seen near the greatest diameter. The hammer is of a compact, fine grained sandstone of light reddish grey colour. It has straight or parallel perforation $\frac{18}{16}$ in. diameter, and its perfect condition suggests a votive or ceremonial use. Length,

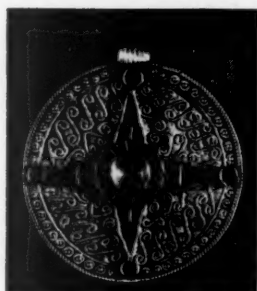


Axe-hammer from the Fens (nearly $\frac{1}{2}$)

$4\frac{1}{4}$ inches. It was found during gravel digging and evidently in a burial place, for fragments of two other urns were later found within a few yards. The ground has been ploughed for many years, and thus any trace of barrows would be lost, especially as the barrows in this district do not often exceed one foot in height. The depth was approximately $1\frac{1}{2}$ to 2 feet from the surface in a compact gravelly clay soil, and directly overlying valley drift and gravel. The hammer is practically identical in form with one figured in Evans, *Ancient Stone Implements*, fig. 140, and described with others similar as being found in barrows and associated with Bronze Age cinerary urns. Reference may be made to *Archaeologia*, lxxv, 77.

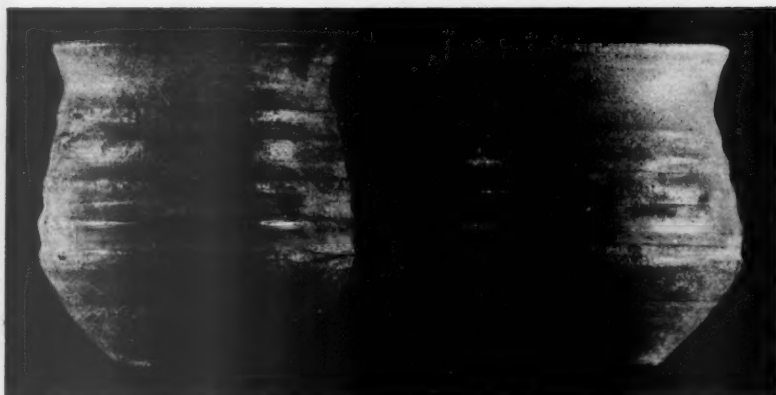
Anglo-Saxon remains in south-east Essex.—Our Fellow Mr. Pollitt reports that in 1923, during the making of a new road at Southend-on-

Sea, an Anglo-Saxon burying-ground was disturbed. Sixteen burials were found, and earth discoloration and the presence of weapons suggested the probability of a number of other graves within the area it was possible to excavate. Exact dating was not at the time possible, but the burials were



Photo, Burrows, Southend

FIG. 1. Gold pendant from Southend-on-Sea ($\frac{1}{2}$)



Photo, Burrows, Southend

FIG. 2. Anglo-Saxon vessels from Southend-on-Sea ($\frac{1}{2}$)

of the period A. D. 500-650. Evidence since found on the site shows that Jutes had settled on the north bank of the Thames estuary by about A. D. 600, or that they were in communication with the inhabitants of that district. A gold pendant (fig. 1) with garnet settings and two pottery vessels (figs. 2 and 3), found together in what was undoubtedly a grave, have now been acquired by the Southend-on-Sea Museum, which is housed at Prittlewell Priory. The pendant is similar to one from Milton Regis,

Kent, described and figured in the *Antiq. Journ.*, vol. vi, pp. 446-7. It differs only in the detail of its design. The four-pointed star of the Southend jewel is larger, and at each extremity was a garnet-filled point; three of these garnets remain in position. The outer border of the design consists of small rosettes. The centre stone is missing, but of nine in an inner circle which surrounded it, five remain. Of twelve cells in the star (three in each arm) five are completely and three half filled.

The pottery vessels were made on the wheel. Except that they are rather smaller they are similar to one found at Breach Downs, Kent,

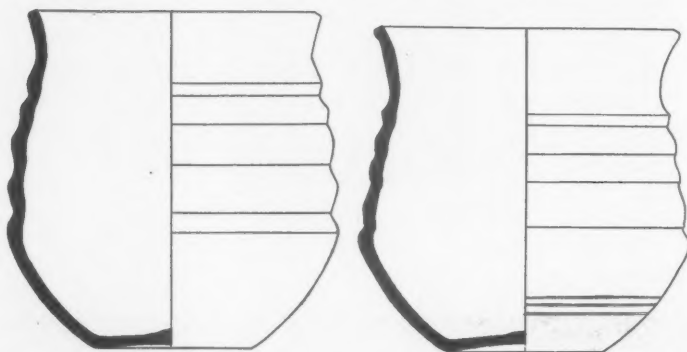


FIG. 3. Anglo-Saxon vessels from Southend-on-Sea; diagram ($\frac{1}{2}$)

figured in *Archaeologia*, vol. xxx, p. 51, pl. i, fig. 2, and now in the British Museum.

Art in the Dark Ages.—Late in the series, but with striking success, the Burlington Fine Arts Club held an exhibition from May to July of ornamental antiquities mostly dating between the Roman and Norman periods. The Dark Ages, placed by Sir Charles Oman between A.D. 476 and 918, had *ex hypothesi* very little or very bad art, and indeed it was a period of decoration rather than artistic creation, with a maximum of archaeological interest and a minimum of aesthetic value. Generous loans from leading museums and private collections enabled the Club to illustrate the changes in barbarian taste and technical processes both in the British Isles and abroad; and many Hungarian antiquities, for instance, were shown for the first time. Oslo sent two monsters' heads of contrasting styles carved in wood by a modern craftsman who copied and pieced together fragments found in Queen Asa's burial ship at Oseberg; and the centrepiece was the contents of a Lombard chieftain's grave. He has been plausibly identified as Agilulf, whose name appears on a gold plate (now in the Bargello at Florence) in the same style and with almost the same figures as those on the front of an enamelled collar, which with a shield-boss, helmet, ring-sword, daggers, buckle and belt-plates, spur and saddle-mount, all of gold, made up the funeral furniture, which belongs to the

opening years of the seventh century. The revised catalogue will contain 39 plates, one of them in colours, to show the effect of inlaid garnets on a gold background, the characteristic technique of the period.

An Aid to Excavators.—Some time ago, with the advice of Mr. A. J. Jones, Mr. A. D. Passmore prepared an electrical machine by which metal objects could be located under ground. The machine is known as a 'Hughes balance', and consists of two drums of some light non-conducting material wound with insulated wire and connected to a battery. This creates a balance between the two drums; and if they are carried over ground and a metal object is passed over by one drum the balance is destroyed, and a listener connected up by wire and headphones hears a loud buzzing. A concealed halfpenny was easily located, and so delicate was the machine that it could be noticed whether the coin was flat or upright. The machine was put together at a cost of about fifteen shillings, and any good electrical firm would no doubt supply a new one for a few pounds. Most excavations in these days are merely trenches at intervals, with the intervening ground untouched: if this was gone over as above described, all metal objects would be immediately discovered. Mr. Passmore would be glad to give further details to any one in charge of an excavation.

Royal Historical Society.—Pursuant to the provisions of the David Berry Trust, a competition will be held in the year 1931 for a gold medal and money prize of £50, which will be awarded to the writer of the best essay on James Hepburn, Earl of Bothwell. All persons desirous of competing for the prize are invited to send in their essays not later than 31st October 1931 for adjudication to the Secretary of the Royal Historical Society at 22 Russell Square, London, W.C. 1. The essay submitted must be a genuine work of original research, not hitherto published, and one which has not been awarded any other prize. For further particulars application should be made to the Secretary, Royal Historical Society, 22 Russell Square, London, W. C. 1.

The Excavations at Colchester.—The new Colchester by-pass road, which was begun early in the summer, is designed to pass across the known site of the pre-Roman settlement where the famous British king Cunobelinus had his capital, and the Colchester Excavation Committee has been enabled, through the response to its appeal for funds, to conduct excavations on part of the threatened area. The site is one of first-rate importance, for no such British town has ever been explored, and as it must certainly have been superseded by the Roman colony founded between A.D. 47 and 50, and now represented by modern Colchester, there need be little fear of the contamination by later material of the pre-Roman site, which lies, protected by the well-known Lexden earthworks, half a mile and more outside Colchester to the west and north-west, on the south side of the Colne. The excavations in fact began on 16th June, under Mr. Christopher Hawkes, of the British Museum, who was succeeded after three weeks by Mr. J. N. L. Myres, F.S.A., and has

since resumed work lasting throughout August and until the middle of September. The general direction of the excavations is in the hands of Mr. J. P. Bushe-Fox, F.S.A., and co-operation with the Colchester and Essex Museum is being fully maintained through its Curator, Mr. M. R. Hull. The first site to be examined, on Sheepen Farm, lies not far from the river at the foot of the hill which must have formed the centre of the settlement, but evidence has appeared everywhere of intensive occupation, lasting until A. D. 50 from an initial date which may provisionally be placed in the second half of the first century B. C.—a limit which will probably have to be raised before long.

The structural remains comprise those of timber houses with earth and clay floors, many open hearths, and drainage, rubbish, and palisade-trenches, interspersed with pits, some of great size, and wells, one of which has its timber lining almost perfectly preserved and may be the oldest well of this type yet known in this country. Pottery has been found in very large quantities, and it is of the greatest interest, for along with native fabric of the Swarling-Aylesford and also hand-made earlier types, there appear Roman provincial and Italian wares ranging in date from Augustus to Claudius, and proving importation of such products on a large scale from the Rhineland, Northern and Southern Gaul, and Italy throughout the half-century preceding the Roman Conquest. The brooches and other bronze objects, and the British, Gaulish, and early Roman coins also deserve close attention.

The Committee's policy is to excavate as much as possible of the 80-foot strip of land to be occupied by the new road before it is too late, but digging has had also to be done in a field on the east of Sheepen Farm which is to be laid out as a sports ground in the autumn: here, in closer proximity to the Roman colony, the occupation lasted until the end of the first century A. D. and seems to be for the most part subsequent to the Roman conquest. It is possible, moreover, that traces of the Expeditionary Force of A. D. 43 are in this neighbourhood not far to seek. North of the river, also, where the new road will cross Mercer's Farm, Mr. Hull has located the northern edge of a Roman cemetery of extent hitherto doubtful.

The main centre of interest is clearly the Sheepen Farm area, and the necessary work there cannot possibly be completed in one season: the results so far obtained abundantly fulfil expectations, and the site is unquestionably of crucial importance for the study of our Celtic civilization and its reception of the influence of Rome, especially as archaeology is here in the closest touch with events of recorded history. It is essential, therefore, that the continuance of the work should be ensured: excavation may have to be carried out against time during the winter, and further subscriptions will be very gladly received by the Hon. Treasurers, The Colchester Excavation Committee, Barclay's Bank, Colchester.

Inscription to Flavius Valerius Severus found in Somerset.—Mr. H. St. George Gray, F.S.A., Local Secretary for Somerset, sends the following note: Towards the end of May last workmen employed by the Somerset County Council discovered a moulded column of Ham Hill stone during

the process of widening Venn Bridge on the Fosse Way between Ilchester and South Petherton. It was embedded in the south bank of the stream about 6 ft. below the surface and from 3 to 4 ft. from the actual waterway. The spot is just within the parish of Stoke-under-Ham, but close

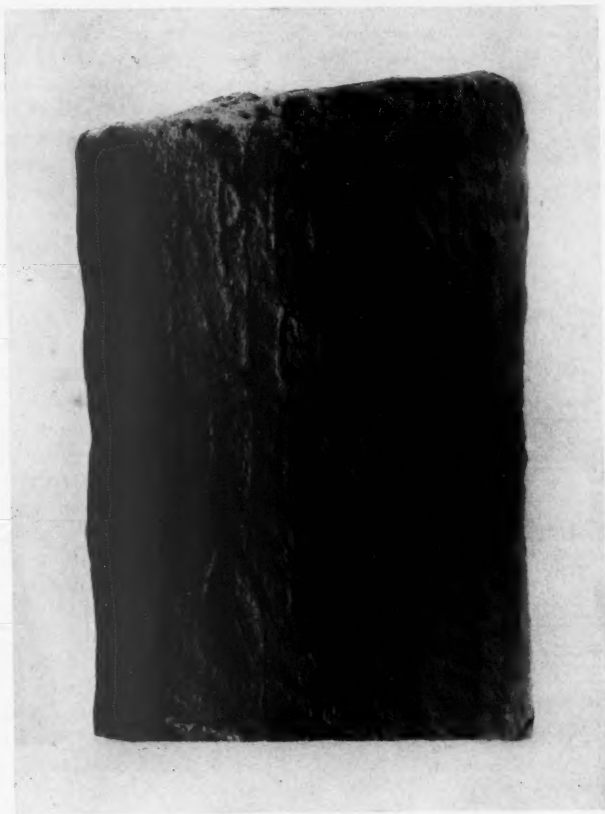


FIG. 1. Inscription found at Stoke-under-Ham, Somerset

to the Martock and Tintinhull boundaries, on the north side of the district known as Stanchester, where remains of the Roman period have been found, and a little west of two barrow-like mounds, about 70 yds. long, known as the Trutts—the significance of which has not yet been ascertained. The column was found barely a mile, as the crow flies, north of the nearest part of the summit of Ham Hill.

As the drawing shows, the shaft is apparently a columnar base for a statue, such as are fairly common in the late Roman period. Although

broken off at the top it was probably little higher originally. The present dimensions are: height $48\frac{1}{2}$ in., including the moulded base $12\frac{3}{4}$ in.; maximum diameter at the top 11 in., at base $13\frac{1}{2}$ in. The circumference of the smaller part of the column is 37 in., and of the base 43 in. The stone is not of a truly circular cross-section. The front face bearing the inscription is weathered to some extent, whereas the opposite face is better worked and less weathered. The sides (right and left) are, however, rough and irregular with oblique tool-marks and shallow vertical grooves, as if prepared for fastening to some structure with mortar. Unfortunately the stone has a vertical crack throughout its length, but since exposure to the air it has not parted.

The inscription is as follows:

IMPFLVAL
SEVEROPI
OFELNOB
CAES

Imperatorii Flavio Valerio Severo Pio Felici Nobilissimo Caesari. These formulae do not as a rule make very good English, but the translation is perhaps best rendered, 'To the Emperor Flavius Valerius Severus, pious and fortunate, most noble Caesar'. The reign of Flavius Valerius Severus was short, A. D. 305–306. He was 'Nobilissimus Caesar' from 1st May 305 to 25th July 306. He then became Augustus and died in April 307.

Mr. R. G. Collingwood, F.S.A., who is interested in this inscription, does not know of another to this emperor alone, found in Britain. But there is a rude roadstone in Maidstone Museum which was found on the line of the Roman road from London and Springhead to Rochester which mentions

Flavius Severus and a better known man, Maximinus, nicknamed Daza. The date of this stone also is A. D. 305 or 306. The Stoke inscription is now exhibited in the Somerset County Museum at Taunton Castle.

Index of Architectural Records.—A Committee representing the Royal Archaeological Institute, the Royal Institute of British Architects, the London Survey Committee and the Society for the Protection of Ancient Buildings has been formed to explore the possibility of compiling a central card index of prints, drawings, and other architectural records. It is felt that this should be of great assistance to those engaged upon the repair of old buildings, to writers of architectural, archaeological, or topographical

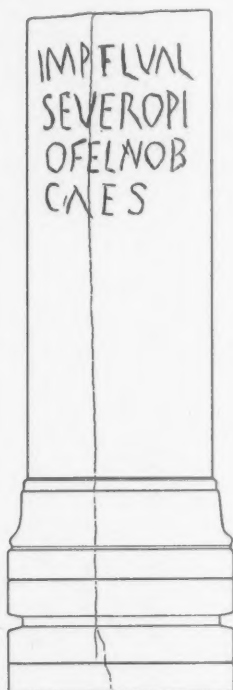


FIG. 2. Columnar base for a statue, Stoke-under-Ham, Somerset ($\frac{1}{12}$)

works and to students generally. If it should meet with success it is not unlikely that it would be developed to include some means of storing such records in a central and safe place, should they be lent, offered, or bequeathed. It is proposed to limit the scope of the Committee's work to buildings at least a century old and to those of England only, but it is hoped that parallel action will be undertaken in Scotland and Wales. It is realized that an immense amount of such records are in private hands, and it would be useful to the Committee if owners would give particulars of their collections now, for with this knowledge the Committee will be better able to form an idea of the extent and scope of the enterprise.

Obituary Notice

Bishop George Forrest Browne. The death of Bishop Browne removes a great archaeologist, whose working life has been prolonged far beyond the ordinary limit. He was elected a Fellow (*honoris causa*) as long ago as 1st March 1888. He was on the Council in 1891, 1894, 1902, and 1910. He filled the office of Vice-President from 1895 to 1898, and from 1915 to 1919. The following is a record of the papers he read before the Society: Basket work images of men on sculptured stones at Checkley and Ilam, Staffs.; An incised stone at Skipwith; A cup-marked stone near Gignese, Italy; The Ivory chair of Maximian at Ravenna; The Llywell stone in the British Museum; Portions of a Temporale of 1350-80; A bamboo staff of dignity of the seventeenth century; Stone circles of Aberdeenshire.

In addition to these he was the author of a number of books dealing with historical and archaeological matters:

The Ilam Crosses, 1889. *Lessons from Early English Church History*, 1893. *The Church at Home before Augustine*, 1894. *Augustine and his Companions*, 1895. *Conversion of the Heptarchy*, 1896. *Theodore and Wilfrith*, 1897. *History of St. Catharine's College*, 1902. *Life and Works of St. Aldhelm*. *Alcuin of York*. *Boniface and his Companions*. *The Ancient Cross Shafts of Bewcastle and Ruthwell*, 1917. *Venerable Bede, Life and Writings*, 1919. *King Alfred's Books*, 1920. *Antiquities near Dunecht, Aberdeenshire*, 1921. *Dunecht and Birse Titles and Notarial Signs*, 1923.

This voluminous work may be said to have been partly the cause, and partly the effect, of his holding the position of Disney Professor of Archaeology in the University of Cambridge from 1887 to 1892. Other archaeologists did not always agree with his conclusions, but they were formed after close study, and, though often expressed dogmatically, were always provocative of thought and further study. They were stimulating to a degree, and must have attracted to the study of history and archaeology many who usually take no note of such things.

In the *Antiquaries Journal* emphasis must naturally be laid on archaeology, but it would be absurd to call Bishop Browne an antiquary only.

For many years he was a great figure in the University of Cambridge. His regular work was that of Secretary of the Local Examinations and Lectures Syndicate, which included both branches of the University's extra-mural work. Bishop Browne, however, was equally concerned with the internal administration of the University, and, for many years, was Secretary of the Council of the Senate. No man in the eighties can be said to have been more influential in the inner working of that great university. In 1891 came the appointment to a Canonry of St. Paul's, followed in 1895 by the Suffragan Bishopric of Stepney. When the Diocese of Bristol was separated from that of Gloucester in 1897, it was natural that a man who had proved himself a ruler in so many departments should be called to the oversight of the reconstituted diocese. Here he did a great work, retiring in 1914 one might almost say only because he was eighty years of age. His intellectual and physical vigour lasted for many years after that event, and he was delighted to spend his leisure in archaeological research. Alpine climbing had been an old love, and he had been a prominent member of the Alpine Club, taking a deep interest in its work up to the end.

The personality of the man is charmingly revealed in *The Recollections of a Bishop*, published in 1915. It is eminently a book to be read even if the reader takes small interest in ecclesiastical, university, and archaeological affairs. Some ten years ago the present writer had a long talk with the Bishop about his longevity. He claimed that he could find out the strength of his 'mainspring' by totalling up the ages of his ancestors who had died a natural death, taking the average, and adding on 4. 'By this calculation', he said, 'I shall live to be 91.' As a matter of fact he was considerably more than 96 when the final call came. Up to a fortnight of his death 'his eye was not dim, nor his natural force abated'. He has left behind a great memory which all his friends will revere.

D. H. S. C.

Reviews

Curia Regis Rolls of the reigns of Richard I and John, preserved in the Public Record Office, vol. iv, 7-8 John. 10 $\frac{1}{4}$ × 6 $\frac{1}{4}$. Pp. x + 436. London: Stationery Office, Adastral House, Kingsway. 1929. 30s.

The present volume covers the period from Trinity Term, 1205, to Michaelmas Term, 1206; and includes pleas both *coram rege* and *de banco*. An interesting suggestion is made in the introduction, amounting to at least a probability, that the handwriting on some of these rolls is that of Martin the clerk of Simon de Pateshull, who became the eminent judge known as Martin de Pateshull.

As in the preceding volumes, a considerable number of entries relate to the exercise of the right of presentation to churches, which formed a constant source of litigation. They are valuable not only from the point of view of the rules of law which were becoming established, but because they often throw light on the early history of a particular advowson, and give the names of rectors otherwise unknown. Action for the recovery of the advowson could be taken in two ways. First, there was a proprietary action—the writ of right of advowson which normally led to the grand assize; and, secondly, a possessory action—the assize of darrein presentment. In the first case the question asked was not whether plaintiff or tenant had an absolute right, but whether one had a greater right than the other—the idea being ‘the relativity of proprietary right’, as Maitland puts it; and this was certainly an easier question to answer. Examples are of frequent occurrence (e.g. pp. 46, 123, 223); but on one occasion the jurors frankly confessed they did not know (p. 97). In the assize of darrein presentment the question asked was, who presented the last parson, now dead, to the vacant church; and if no conveyance had been made in the meantime that person or his heir would win the case (e.g. p. 34). Supposing a conveyance had been made, the assize was not open to the grantee; but he could put in a special plea if the assize were brought to which the grantor was a party (e.g. p. 49); and, further, another possessory action, the *Quare impedit*, had been invented for his use in such circumstances. Thus the grantee’s security was becoming established. The case of the church of Little Steeping in Lincolnshire illustrates the doubt which existed as to whether the heir of a grantee should present, inasmuch as the grantee never actually exercised his right in his lifetime; the result was a clear decision in his favour (p. 51). Many cases depended on whether a grantor had been in a position to make a valid grant of the advowson. For example, Alice Constable maintained that the advowson of Saltfleetby had been granted to her in marriage before its grant to the priory of Legbourne: this was a question of fact; and it is curious that the jury was asked to say whether the grant was made to Alice, not before the grant to the priory, but before the priory was founded (p. 11). The case of Whixley is similar (pp. 75, 318). The defendants against the prior of Merton pleaded that the charter of Eudes de Malden granting the church of Malden to the priory was not lawfully made, because

Eudes had earlier entered a religious order (p. 126); but from the subsequent history of the church it appears that the plea was unsuccessful. In an assize of darrein presentment the defence that a church had been appropriated was a good defence, for the church was not vacant in such cases, the religious house having become the rector (e.g. p. 155); and in a proprietary action appropriation was even more obviously a line of defence (p. 90). A darrein presentment relating to Sandon in Essex fell through because the plaintiff did not mention his wife through whom he claimed the advowson (p. 19); and another, relating to Plungar in Leicestershire, was brought too late, no less than twenty-four years after the last rector died (p. 288). Cases relating to moieties are sometimes confusing, because the rector of a moiety might be described as rector of the church (p. 79); and a moiety of a church sometimes clearly means a moiety of the advowson (p. 98). And yet the advowson of a moiety of a church, and a moiety of the advowson of a church were two separate things.

But ecclesiastical matters form only a tithe of the volume's interest; and the classified subject-index, admirable as usual, leads the way to various aspects of social life and history. There is a good case about a disturbance at Guildford castle, originating in the non-payment for cloth purchased by men who looked after the king's horses (p. 87); and another about the proof of villein status (p. 22). There are five charters relating to Essex on the dorse of the membrane of one of the later rolls (pp. 314-16). The stewardship of Holme abbey was the subject of a proprietary action (p. 243). A father wanted a jury to uphold his denial that he was present at his son's wedding, to which he had objected, and granted dower to the bride (p. 25). Genealogists will find the Curzons settled at Kedleston (p. 165); a note of the descendants of Robert son of Roscelin who is stated genuinely to have come over at the Conquest (p. 34); the name of Gilbert Rafin, great-grandfather of a Hugh de Neville (p. 79); and three generations of a family holding a knight's fee in an Oxfordshire village of particular interest to our Society, of which one branch took the name of Stokes, and the other that of Chiselhampton (p. 193). It is disappointing to find that so many cases were postponed, often owing to the recognitors' default; but our impatience, like that of the parties to the actions, must be checked, and we may look forward to some of the results in the next volume. CHARLES CLAY.

Royal Commission on Historical Monuments. An Inventory of the Historical Monuments in London, vol. v. East London. 10½ × 8½. Pp. xlviii + 149. London: Stationery Office, Adastral House, Kingsway. 1930. 17s. 6d.

East London is not generally associated in the public mind with matters of archaeological interest or examples of ancient architecture, but, as a matter of fact, the district includes some of the most notable buildings that remain to us. To name only a few, there are the Tower of London, Greenwich Hospital, Southwark Cathedral, Morden College, Eltham Palace, and Charlton House, a series which presents an architectural sequence from the Conquest to Queen Anne. Besides these there are important houses unknown to all but diligent inquirers; a few churches, medieval and

post-reformation, and quite a number of almshouses, not to mention small buildings, unpretending yet noteworthy, in the streets of Hackney, Stepney, Woolwich, Lewisham, and other East End parishes. The fittings, too, inside the buildings afford fine examples of their kind. There is a certain amount of ancient glass, there are fine funeral monuments and pieces of church plate; good ceilings both of plaster and painted; and there is a wealth of fine woodwork in pulpits, organ-cases, and staircases.

These objects are well illustrated in photographs and described in the appropriate (but far from impassioned) language of the inventory-compiler. The inventory is complete and fully descriptive, and if the reader seeks a more human touch, he will find it in the short preliminary essays contributed by the well-known pens of different experts.

The amount of patient investigation that has gone to the making of this record is immense, and reflects the utmost credit on the staff who undertook it. It would be impossible to check the vast number of facts here presented, but a cursory inspection shows that the compilers have taken recent researches into suitable account, and have not relied on the rather superficial conclusions which satisfied chroniclers in the past. To give a reasoned history of such buildings as the Tower of London and Greenwich Hospital is no mean feat; and in connexion with the great fortress and prison it is gratifying to find that all the inscriptions have been recorded, many of which are merely initials, while others are of a poignancy that brings home to the mind the propriety of the Church's prayer for 'all prisoners and captives'. The unfortunate people who were consigned to the Tower were not malefactors such as are now deservedly kept in detention, but rather victims of misguided ambition, of political intrigue, of royal spite or even royal, and passing, pique. Photographs of some of the more notable inscriptions reveal a skill in carving, and an aptitude for beautiful lettering quite surprising in amateurs such as the artists must have been; and incidentally they bear witness to the long and weary hours to which the work brought some alleviation.

Of Southwark Cathedral (formerly known as St. Mary Overy), which is not as familiar to the public as it deserves to be, a plan and many views are given. Such, too, is the case with Charlton House, a fine specimen of a Jacobean house, which, from its plan and general handling, would appear to be later than the date assigned to it, 1607-1612; but one hesitates to argue with such careful chroniclers as those here concerned. Brooke House, in Hackney, may be regarded as a discovery of the Commissioners: it retains its old and interesting plan and a few original features, but it has been much modernized. Many other unexpected examples of interest and of beauty are recorded and illustrated by photographs and, in many cases, by plans. Eltham Palace, with the beautiful roof of its hall, and Eltham Lodge, with fine woodwork of the late seventeenth century, are well known, and so is Morden College, near Greenwich, a spacious almshouse designed by Sir Christopher Wren. But limitations of space forbid detailed reference to the many objects of interest to be found in these eastern districts of London. Many a spare hour might be spent in visiting them, with this volume as a guide, in spite of its being too bulky to go into the pocket;

and one can only conclude with a tribute of admiration to the work that has gone to the making of it, and the wealth of beauty that it reveals.

J. A. G.

Annals of a Suffolk Village, being Historical Notes on the Parish of Horringer.

By MANNERS W. HERVEY. $7\frac{1}{2} \times 5\frac{1}{4}$. Pp. viii + 128. Cambridge: University Press. 1930. 10s. 6d.

Lord Manners Hervey, in this well got-up volume, has given us a very readable account of the parish of Horringer, of which for many years he has been Rector. Considering that no greater service can be rendered to a locality than the assemblage of the historical facts about it, his object has been to reconstruct as far as possible the life that has gone on at Horringer from Domesday times until the present century. Avoiding the extreme parochialism that so often marks parish histories of this description, and recognizing that in dealing with a small country village considerable periods are bound to occur when it is impossible to illustrate from strictly local sources at all, the writer does not hesitate from time to time, when need arises, to step outside the bounds of the parish altogether. In this way he admirably preserves the sequence of his history, and his illustrations from Jocelin of Brakelond and the Bardwell Gild accounts, and also his quotations from Crabbe and the lesser known Suffolk poet, Nathaniel Bloomfield, are all very apposite. After all, what we know actually to have occurred in one parish usually we may strongly suspect to have occurred, or at any rate to have had its influence, in the next.

The section dealing with the Church, though brief, is particularly interesting. Horringer has been unfortunate in the matter of 'restoration', and nothing, we are told, remains of the original church older than the fourteenth and fifteenth centuries. For the Stuart and Commonwealth periods the writer does well to illustrate from the Visitation Articles which by inference throw so much incidental light on the fabrics and fittings of our churches during the seventeenth century. The description of church life at Horringer in early Victorian days, derived from personal memory and from tradition, is well worth preserving.

The Church Plate presents a curious enigma, as both the flagon and the almsdish are known, by their inscriptions, to have been presented to the church several years earlier than their supposed hall-mark dates, but we very much doubt whether the explanation suggested on p. 88 is at all possible, and should feel much more inclined to attribute the discrepancy to the misreading of the date letters.

The photogravure illustrations leave nothing to be desired, but we should have liked to know the sources from which the portraits of Colonel Blagge and Margaret Godolphin were derived.

J. F. W.

Pompeii in three hours. By TATIANA WARSHER. With 100 illustrations and plans. $6\frac{1}{2} \times 4\frac{1}{2}$. Pp. 156. Rome: Industria Tipografica Imperia. 1930. 20 lire.

This little work will be found to be an extremely useful handbook for visitors to Pompeii. A short introduction (which is supposed to have

been read before arrival) gives Pliny's account of the catastrophe by which it was overwhelmed, and a certain amount of preliminary information in regard to the Pompeian house. A word might have been added to caution the reader that the Pompeian house is *not* the type of house which was in use in Rome itself—for that we must, as has frequently been pointed out, derive our information from Ostia. A short, but useful, description of the principal buildings is then given, starting from the Porta Marina and its surroundings, and going through the town. Besides the public buildings eighteen selected houses are visited, and there is an interesting section—the first description in English—on the new excavations. The author's photographs are excellent, and form only a small part of her large collection. Misprints are comparatively few, and the worst occurs in the advertisements, where one of the hotels is said to have been 'founded in 1960'.
T. A.

London Museum Catalogues: no. 3. London in Roman Times. 8½ × 5½.

Pp. 211. London: The London Museum, 1930. 2s. in paper, 2s. 6d. bound.

Our Fellow Dr. R. E. M. Wheeler has deserved well of all who are interested either in London or in the Roman period by producing this admirable catalogue of the Roman objects in his charge at the London Museum. Although these objects by no means exhaust the small Roman finds from London, they are sufficiently typical of them to convey a trustworthy impression of the whole; and for this reason the appearance of the catalogue, following quickly upon the Royal Commission's volume on Roman London, is particularly opportune, for the earlier volume dealt especially with structural remains, and left room for a separate account of the small finds, which this catalogue now supplies. A 'Prologue' gives a general account of Roman London, based largely on the Royal Commission's findings, and an 'Epilogue' sums up its main cultural and historical characteristics as they appear from the material under review. Our Fellow Dr. T. Davies Pryce contributes an extremely useful section on Samian ware, in which special attention is devoted to an analysis of the characteristic differences between Claudian and Flavian vessels. Mr. E. B. Birley contributes an appendix on potters' stamps, in which he discusses 250 different potters and gives the varieties in their signatures—a most valuable piece of work; and a list of all the Roman coins in the Museum whose provenance is known has been compiled by our Fellow Mrs. Wheeler.

It will be seen at once that the value of this work far transcends its immediate purpose. Over 500 separate objects are illustrated, and every illustration is good and clear; consequently, this is one of the books that will always be in the hands of any student who is working at Roman pottery and small finds. Such students will be especially grateful for the many compact little excursions which occur from time to time in the text: on pipeclay figurines, on writing materials, on the shapes of lamps and their chronology, on the different forms of locks and keys, on tools, on surgical instruments, on brooches, on the mysterious dodecahedra, on

the types of metal jugs, on the varieties of amphorae, and so forth. These are cautious and balanced in judgement, terse in style, and well supplied with references; and the ordinary archaeologist will find them the most useful part of the book.

There must, in such a work, be points on which the author's view of some detail fails to convince a reader: when we are told that 'this type of brooch is clearly derived from the preceding' (p. 90), we sometimes find ourselves still a prey to doubts; but this happens remarkably seldom. Two small slips—perhaps only misprints—have caught my eye: on p. 78, the inscription BASILI . . on a knife-blade is shown by the British Museum parallels to have been, in full, P BASILI F, not BASILI(S); and, on p. 116, Publius Rufinus C . . . should be Publius Rufinius C . . . If exceptions can prove a rule, these criticisms show how high is the standard of accuracy maintained in this catalogue.

R. G. COLLINGWOOD.

Latin Historical Inscriptions illustrating the history of the Early Empire.

By G. McN. RUSHFORTH. Second Edition. $8\frac{3}{4} \times 5\frac{1}{2}$. Pp. xxxii + 144. Oxford: University Press; London: Milford, 1930. 8s. 6d.

The *Corpus Inscriptionum Latinarum*, the great collection of Latin inscriptions published by the Berlin Academy under the inspiration of Mommsen, has fallen on evil days since his death in 1903. At that time it was, it may be said, approaching completion, as far as that was possible in view of the continual discoveries of new inscriptions all over the world, which were as a rule included in supplements in the *Ephemeris Epigraphica* until new volumes of the larger work could be prepared. Most volumes were provided with indices, and of the fifteen volumes all but four were complete as far as they went.

Since then there has been a most regrettable slowing off in the completion of the work, which is being outstripped by other undertakings begun far later, such as Pauly Wissowa's *Realencyclopädie*; and the war is only in part responsible for the delay. Worst of all, the most important volume of all (vi), which deals with the city of Rome, has only recently been furnished with the first instalment of its indices; while xv, the *Instrumentum Domesticum* of the city of Rome, has no indices at all.

Such a work as the present is therefore very welcome as a guide in the *mare magnum* of the inscriptions of the Empire: for in the long period, from 1869 onwards, to which we have alluded, many of the volumes of the *Corpus* have fallen behind the times. It has indeed been found necessary (the work was begun before Mommsen's death) to issue a revised edition of the first volume, dealing with pre-Augustan inscriptions in general; while the seventh, which deals with Britain, is to be republished under the capable direction of Mr. R. G. Collingwood. So that Mr. Rushforth's book, which selects some of the inscriptions which are most important from the historical point of view, may also serve as an introduction to epigraphy, and may impel scholars and students to make further use of this extraordinarily important class of evidence.

The first edition appeared in 1893; and the book has not been recast

in a new and extended form, but reproduced photographically from sheets of the first edition, most of the necessary corrections and improvements having been made,¹ and some pages of Addenda and Corrigenda (largely due to Professor J. G. C. Anderson and Mr. H. M. Last) inserted. The best testimony to the excellence of the book is that it has so well stood the test of time that it is still found useful for educational purposes. T. A.

Prehistoric Malta: The Tarxien Temples. By Sir THEMISTOCLES ZAMMIT. 9½ × 6½. Pp. xvi + 127. Oxford: University Press; London: Milford, 1930. 12s. 6d.

Archaeologically, Malta is one of the most surprising places in the world. Just as its quaternary fauna includes a number of unique species, so its neolithic inhabitants possessed a culture of the origins of which nothing is known, because it is in reality unique. And the monument here selected for description, the group of temples at Tarxien, while conforming to the normal type of Maltese megalithic monuments, is the finest of them all, and itself presents a number of unique features, notably the exceptionally fine carvings with which it is adorned. Had we only the whole of the great life-size statue of which the lower part is preserved in this structure we should have a piece of statuary unsurpassed in the achievements of neolithic art.

The discovery of a Bronze Age cemetery of about 2000 B.C. at a level of about 3 feet above the floors, showing that it began to be used only after the building had been ruined, shows that we must go farther back with the chronology of this and other megalithic monuments than we had previously thought. But when we come to an attempt at an absolute date, we are no better off than we were before. Though three different and clearly marked occupation levels were found, the pottery shows no evolution whatsoever, as I have already pointed out:² nor is there any pottery in the island of such a character that it can be assigned to an earlier date than the rest of the neolithic group.

In a careful examination of Tarxien with Sir Themistocles Zammit himself in June last, he pointed out to me that remains of the massive enclosure wall undoubtedly exist all round the back side, consisting of base slabs supporting large flat upright slabs, with shorter buttressing stones between these last.

Only a small portion of this is shown on the plan, and the exploration of Tarxien is therefore not to be regarded as entirely complete. Nor will its completion be altogether an easy matter, as parts of the modern

¹ Among those that have escaped the author's eye we may mention Tiano for Teano (p. 62), Trient for Trento (p. 93).

The reference on p. 4 to *C. I. L.* i, p. 312 is insufficient; and on p. 26 (and elsewhere) it would have been better to refer to *C. I. L.* vi, part iv, fasc. 2 (1902). But even from that it cannot be learnt that seven *cippi* (and not four) of those which marked the pomerium of Claudius have been found—two in 1909, and one in 1913. The correct division into lines of *C. I. L.* vi, 916 (no. 81) is given in *C. I. L.* vi, 31201.

² *Antiquaries Journal*, iv (1924), 93-100.

enclosure wall will have to be shifted. The Society has therefore every right to hope for an additional report from Sir Thémistocles on this interesting monument, in the course of a year or two.

But what all students hope for even more is an adequate account of the marvellous hypogeum of Halsafieni, which has never been described except in the most summary manner. Nor will they be content until we have from his pen a general account of the megalithic monuments of the island such as he alone can give—a magnification to ten diameters, let us say, of his extraordinarily interesting article in *Antiquity*.¹ He clearly indicates the need for a comprehensive description of the Maltese antiquities: but no one would write it anything like as well as he. T. A.

The Arts in Early England, vol. vi, part i, *Completion of the Study of the Monument of the great period of the art of Anglia in Northumbria*. By G. BALDWIN BROWN. 8 $\frac{1}{2}$ × 6. Pp. xi + 91. London: John Murray, 1930. 15s.

After an interval of nine years, this first part of Prof Baldwin Brown's long expected sixth volume is indeed welcome, and everything about it is satisfactory except that the plates have raised the price considerably. It contains detailed comments on the Stonyhurst book of St. John, the silver altar of St. Cuthbert, the Franks casket, the Hackness cross, and the Tassilo chalice, this last being included as possibly Anglo-Saxon. It is interesting to find the late Mr. Weale's early date confirmed for the Stonyhurst binding; and the Coptic features of the Franks Casket are rendered plausible by the recent recognition of Coptic bronze bowls of somewhat earlier date in Kent and on the Continent. The Hackness cross is no doubt important, but is poor art, and its pseudo-Ogham inscription more of a nuisance than a problem. The Professor is not the only archaeologist to regard the Tassilo chalice of Kremsmünster as Anglo-Saxon, but he does so half-heartedly, and much more work of the eighth century must be found or recognized before such an origin can be proved. The work is clearly not Irish, and yet it was Ireland that sent most of the missionaries to the Continent in that period.

There is a short index which will be placed in an awkward position when the remainder of the volume is published unless incorporated with that of part ii. A critical reader would remark that *dosformige Spännen* does not refer to the oval or tortoise brooch of Viking times, and that the photograph of Wayland's Smithy is hardly relevant and certainly inadequate. But such blemishes will not make this instalment less acceptable to all concerned with the Christian period of Anglo-Saxondom.

REGINALD A. SMITH.

The Old Standing Crosses of Herefordshire. By ALFRED WATKINS. 8 $\frac{1}{2}$ × 5 $\frac{1}{2}$. Pp. 83. Hereford: Woolhope Naturalists' Field Club; London: Simpkin Marshall, 1930. 10s.

Herefordshire has not escaped the singular severity with which Time and the iconoclasts of the sixteenth and seventeenth centuries have dealt

¹ iv (1930), 55-79.

with the churchyard and wayside crosses of the country. The county is, however, fortunate in possessing more than an average number of these memorials and a local antiquary of zeal and enthusiasm to schedule them. In *The Old Standing Crosses of Herefordshire*, which has been produced under the auspices of the Woolhope Club, Mr. Alfred Watkins has contributed a valuable addition to the archaeological records of the county. The book is in eight chapters and has a preface by the Bishop of Hereford. Though some of the theories advanced by the author are very debatable, the real value of the volume lies in the schedule of the crosses which is given in chapter v. This is the result of a most commendable and careful piece of archaeological field-work. Every parish in the county has been visited and the remains of the churchyard or village cross reported upon. In each case measurements have been taken, the position of the cross is given, and the remains adequately described. Where nothing remains it is so stated. The book is illustrated with some 142 reproductions of the author's own excellent photographs and include, on the last page one of the charming little crucifix which surmounts the tomb of Bishop Aquablanca in Hereford cathedral.

The Ancient Bridges of the South of England. By E. JERVOISE on behalf of the Society for the Protection of Ancient Buildings. With an introduction by C. R. Peers. $7\frac{1}{4} \times 4\frac{3}{4}$. Pp. xvi + 128. Westminster: The Architectural Press, 1930. 5s. 6d.

Ever watchful where our national monuments are in jeopardy, the Society for the Protection of Ancient Buildings a few years ago decided to collect and publish a descriptive schedule of all our bridges in the hope of enlisting the support of an enlightened public in the cause of their preservation. The work has been entrusted to Mr. E. Jervoise, and what may be called an interim report has now been issued under the title of *The Ancient Bridges of the South of England*.

It is a handy and valuable little guide-book and has a well-merited benedictory preface by our President. The author has attempted to record all the bridges in the counties south of the Thames (with the exception of those in Devon and Cornwall), and many with a knowledge of the country surveyed will be surprised at the amount of material collected. By the method adopted in arranging this material, the bridges are noted in the order in which they are met as one follows each river from source to mouth. Each bridge is briefly described and an historical description is given when available. The book is well illustrated with some 78 photographic reproductions. The inclusion of a map showing the rivers and the bridges recorded would add to the interest and completeness of future volumes.

English Medieval Enamels. By M. CHAMOT. University College (London) monographs on English medieval art, ii. $9\frac{1}{2} \times 7$. Pp. xii + 50 with 20 plates. London: Benn, 1930. 7s. 6d.

This book appears opportunely in a year in which English medieval art has been much to the fore. The great exhibition at the Victoria and

Albert Museum, with the companion exhibition of manuscripts at the British Museum, and the anxiety about the fate of the Luttrell Psalter and the Bedford Book of Hours, now happily ended, have served to keep the subject prominently before students and the public at large.

The attempt to distinguish and classify English enamels is comparatively recent. While in 1894 Mr. Starkie Gardner was maintaining an English origin for several well-known enamels, in 1925 the late Mr. H. P. Mitchell could write that the suggestion of such work having been produced in England still seemed somewhat daring. His own studies of the subject marked an important advance, and provided material for the work now under consideration.

The book has been produced under the editorship of Professor Tancred Borenius, to whose teaching and inspiration the author acknowledges herself indebted. The period covered ranges from the ninth to the fifteenth century, thirty-six examples being quoted, and, with the exception of the Coronation Spoon in the Tower, which may never have been enamelled, illustrated. There is a general introduction to the subject followed by a *catalogue raisonné* of the enamels.

The difficulty of deciding in favour of an English origin is shown by the fact that out of the thirty-six enamels described no less than seventeen are tentatively called English, given an alternative provenance, or pronounced to be of uncertain nationality. This is not surprising, since most of them are small, and all are portable; and it is known that craftsmen travelled from one country to another. Certain examples, however, show that striking difference from and independence of the recognized continental types which has been noted in other arts, and some may with reasonable confidence be assigned to England. Before the Conquest the Alfred jewel and the Minster Lovel jewel, both cloisonné, are distinguished by features of technique and, in the former case, of iconography from similar examples of more doubtful attribution. Champlévé specimens include the Cambois brooch in the British Museum, a lion from a brooch in Dr. Borenius's collection, and, perhaps, a boss found on the site of Carfax church, Oxford, in the Ashmolean Museum. In the next period we have in the Masters plaque of the twelfth century at South Kensington a specimen in which English work is indicated by the liveliness of the composition and the unmistakable likeness to the later Winchester school of manuscripts. The Henry of Blois panels in the British Museum ascribed by Mr. Mitchell to Godefroid de Claire are here attributed to a Mosan craftsman in England or to an English monk trained in a Mosan atelier. A group comprising three ciboria belonging respectively to Lord Balfour of Burleigh, the Pierpont Morgan Library, and the Victoria and Albert Museum, a ciborium-cover in the British Museum, a crozier in the Bargello, Florence, and a casket at South Kensington have some claims to an English origin. A group of seven panels with scenes from the history of St. Peter and St. Paul in various museums, a plaque with St. James and St. Jude in the British Museum, and a figure of our Lord in the Louvre may be related to the Henry of Blois plaques, and with them, according to Mr. Mitchell's suggestion, may have formed a shrine;

they may be dated early thirteenth century. As Limoges came to have a monopoly of the industry, English champlevé enamellers went in mainly for heraldic work, as seen on the Garter stall-plates, with occasional exceptions such as the Wardon Abbey medallions in the British Museum. Cloisonné technique survived on the precious metals; the Coronation spoon in the Tower would be an example if the evidence of enamelling were sufficient. Translucent enamel, which owing to the exigencies of space receives less attention, is represented by a few conspicuous examples including the King's Lynn cup, the Bruce horn, and William of Wykeham's crozier, while some smaller objects are noted.

Miss Chamot's book fills a definite blank. The collection in one volume of all the possibly English enamels known is in itself a useful piece of work. They have been carefully catalogued, with all essential references, and the introduction gives a valuable survey of the field, showing extensive research and independent judgement based on a first-hand study of the individual pieces. The volume is attractive in appearance, convenient in size, and the illustrations are clear.

A. B. T.

Periodical Literature

Antiquity, June 1930, contains:—Early names of Britain, by E. Ekwall; The sword-bearers, by E. Evans; Excavation, by Lt.-Commander N. F. Wheeler; Prehistoric flint sickles, by E. C. Curwen; Butser Hill, by S. Piggott; The Glozel forgeries, by A. Vayson de Pradenne; The Gorge of Petra; The desiccation of Africa; A polished axe from South Africa.

The Archaeological Journal, vol. 84, contains:—The College of St. Mary Magdalene, Bridgnorth, with some account of its deans and prebendaries: The college, by Prebendary Clark-Maxwell; The deans and canons of Bridgnorth, by A. Hamilton Thompson; The architectural remains of the mendicant orders in Wales, by A. W. Clapham; The painted windows in the chapel of the Vyne in Hampshire, by G. McN. Rushforth; Some additional specimens of English alabaster carving, by P. Nelson; The choir stalls in Winchester cathedral, by A. W. Goodman and T. D. Atkinson; The circle and the cross, chap. xxvii, by the late A. Hadrian Allcroft; The Saxon land charters of Hampshire with notes on place and fieldnames, by G. B. Grundy; The Order of St. Antoine de Viennois and its English commandery, St. Anthony's, Threadneedle Street, by Miss Rose Graham; Report of the meeting held at Cambridge in 1927.

The Architectural Review, June 1930, includes:—The English house, xxi, The eighteenth century, by Nathaniel Lloyd.

July 1930, includes:—The English house, xxii, The eighteenth century, by Nathaniel Lloyd.

Journal of the Society for Army Historical Research, April 1930, includes:—The letters and diaries of 1st-Lt. A. M. Lang, Bengal Engineers; The colours of the British Marching Regiments of Foot in 1751, by Lt.-Col. J. H. Leslie; The Sikhs of the Punjab, by Sir Louis Dane; A soldier's ballad, c. 1640; The model room in the Royal Arsenal, Woolwich, by Major O. F. G. Hogg; The Points of War, by Lt.-Col. J. H. Leslie; Relative rank in the Royal Navy and Army; Articles of War 1642.

The Journal of the British Archaeological Association, vol. 35, part 2, contains:—'Pisan' churches on the Via Traiana, by E. Jamison; Medieval Gwent, by W. Rees; Irnham, Lincolnshire and Hawton, Nottinghamshire, by E. Woolley; The church of St. Botolph, Bossall, N. R. Yorkshire, by J. W. Walker; The church of All Saints, Foston, N. R. Yorkshire, by J. W. Walker; Tribal hidage, by F. A. Brooke; A piece of Kentish plate, by T. G. Barnett.

The British Museum Quarterly, vol. 5, no. 1, includes:—A pre-historic Persian jar; Minoan gems; A Protocorinthian pyxis; A red-figured loutrophoros; The army list of Roman Britain; Athenian coins; A gold coin of Carthage; Hannibal's war chest, a South Italian hoard; English gold nobles and the privy mark system; A Celtic torc and arm-lets; Objects from Mr. Brunton's excavations; Egyptian and Babylonian antiquities; A Tanagra figurine from Babylon; Chinese porcelain from Peking; An animal medallion; Papal bulls on papyrus.

Journal of the British Society of Master Glass-Painters, vol. 3, no 3, includes:—Medieval glass in Oriel college chapel, by G. McN. Rushforth; French glass-painters' methods of using cartoons during the sixteenth century, by Count Paul Biver; The photography of stained glass, by P. Hood; A history of the York school of glass-painting: viii—The influence of schools of glass-painting in other parts of England upon York design, by J. A. Knowles; Ancient leads for windows and the methods of their manufacture, by J. A. Knowles.

The Burlington Magazine, May 1930, includes:—Some recently discovered English wall-paintings, by E. T. Long; Chinese porcelain recently acquired by the British Museum, by R. L. Hobson.

June 1930, includes:—Austrian stained glass at South Kensington, by B. Rackham; Medieval English art at the Victoria and Albert Museum, by E. Beck; Some early Chinese ceramics at The Hague, by H. C. Gallois.

July 1930, includes:—Art in the Dark Ages, by R. A. Smith; An old American silver tankard, by E. A. Jones; Two thirteenth-century bronze ewers, by Mehmed Aga-Oglu.

August 1930, includes:—The Westminster school and its influence, by J. G. Noppen; The Jewels of St. Albans abbey, by C. C. Oman; Exhibition of Bavarian church art in Munich, by H. Tietze.

The Connoisseur, June 1930, includes:—More about the Pepys, Dyham Park and Sergisson bookcases, by R. W. Symonds; English heraldic glass in America, by F. S. Eden; English or German? by F. Roe.

July 1930, includes: English glass in Mr. W. T. Wiggins-Davies' collection, by W. A. Thorpe; English medieval art at South Kensington, by F. Roe; Dusart's busts at Arundel castle, by Lady Victoria Manners; Heraldic glass at Ronaale manor, by F. S. Eden.

August 1930, includes:—Genuine or Forgery? The 'Rufford abbey' panel, by F. Roe and C. R. Beard; The Wiggins-Davies collection of English glass, by W. A. Thorpe; Old Transylvanian silver, by Magda Oberschall; English medieval gem-rings, by C. C. Oman.

The Journal of Egyptian Archaeology, vol. 16, parts 1 and 2, contains:—The bronze statuette of Khonserdaisu in the British Museum, by H. R. Hall; Miscellanea, by G. P. G. Sobhy; The numerical value of a magical formula, by C. Bonner; Funerary designs of predynastic jars, by G. D. Hornblower; A new letter to the dead, by A. H. Gardiner; The prayer for a child on a figure of the late Middle Kingdom, by S. Schott; Regarding receipts in the Zenon Archive, by W. L. Westermann; A note on the coronation rites in Ancient Egypt, by M. Matthiew; The secret chambers of the sanctuary of Thoth, by F. W. Green; The relation of Amūn to Zeus and his connexion with meteorites, by G. A. Wainwright; Some wooden figures of the eighteenth and nineteenth dynasties in the British Museum, by H. R. Hall; Cosmetics, perfumes and incense in Ancient Egypt, by A. Lucas; The tomb of Aahmose, supervisor of the mysteries in the house of the morning, by A. W. Shorter; Notes on certain passages in various Middle Egyptian texts, by A. M. Blackman; A bronze statue of a cake-carrier, by W. Spiegelberg; Egypt and the Aegean in the late Bronze Age, by J. D. S. Pendlebury; Bibliographies.

The English Historical Review, July 1930, contains:—An unknown register of the reign of Edward III, by Dr. F. Boek; Elizabeth and the Netherlands, 1586–7, by Prof. J. E. Neale; The marquis of Albeville and his brothers, by E. S. de Beer; Joan Canning on her husband's policy and ideas, by Prof. H. Temperley; The Domesday hidation of Sussex and the Rapes, by J. E. A. Jolliffe; Records of the keepers of the peace and their supervisors, by Prof. B. H. Putnam; Visitation returns of the diocese of Hereford in 1397, iv, by Canon A. T. Bannister; The Cabinet controversy on Subsidiary Treaties in time of peace, 1749–50, by D. B. Horn.

The Journal of Hellenic Studies, vol. 50, part 1, contains:—A picture of the battle of Lepanto, by R. M. Dawkins; The west pediment of the Parthenon, by W. R. Lethaby; The neutrality of Delos, by W. W. Tarn; A bronze mirror in the Ashmolean Museum, by M. N. Tod; The development of the second Spartan empire, by H. W. Parke; Kjellberg's new class of Clazomenian sarcophagi, by E. R. Price; Herodotus and the reconstruction of history, by K. M. T. Chrimes; An alleged archaic group, by B. Ashmole; Some notes on fifth-century history, by A. W. Gomme; A survey of Greek alchemy, by F. S. Taylor; Note on two archaic reliefs in Oxford, by J. D. Beazley; Sardapanalus again, by B. Ashmole.

Proceedings of the Huguenot Society of London, vol. 14, no. 1, includes:—

The story of Peter Lussell, a Huguenot refugee, and his son William, by T. P. Le Fanu; A Huguenot theory of Politics: the 'Vindiciae contra Tyrannos', by Ernest Barker; The sixteenth-century French speaking and English speaking refugee churches at Frankfort, by H. J. Cowell; Huguenot regiments in Holland, by W. H. Manchée; The communion plate of the church of Le Carré, by W. Minet.

History, April 1930, includes:—Freedom of the seas, by Admiral Sir Richard Webb; Wolsey, by Sir Lewis Dibdin; The international committee of historical sciences, by Prof. J. H. Baxter; Wireless lessons in history, by Mrs. D. P. Dobson; Historical revisions: liii, The origins of the American Civil War, by D. W. Brogan.

July 1930, contains:—The Greek centenary, by W. Miller; A patronage feud in a pocket borough (Helston, Cornwall), by H. S. Toy; The decline of the printed word, by G. T. Hankin; Historical revisions: liv, The so-called Star Chamber Act, by C. H. Williams.

Bulletin of the Institute of Historical Research, June 1930, includes:—The Marginalia of the Treasurer's Receipt Rolls, 1349–99, by A. Steel; The arrangement of Diocesan records, by H. H. E. Craster; Some proceedings in Chancery under Wolsey; Summaries of Theses: lx, The machinery of manorial administration, with special reference to the lands of the bishopric of Winchester (1208–1454), by G. Eleanor Swift; lxi, The function and influence of privy councillors in Parliament in the early seventeenth century, by Dorothy A. Keane; lxii, The status of French and English in the Neutral Islands, 1635–1763, by Gertrude M. Fletcher; lxiii, A study of the manuscripts of theatrical and dramatic interest preserved in the British Museum, 1660–1720; lxiv, Great Britain and the establishment of the kingdom of the Netherlands, 1813–16, by G. J. Renier.

The Library, vol. 11, no. 1, contains:—The bibliography of the *Commedia dell'Arte*: the miscellanies of the *Comici* and *Virtuosi*, by Kathleen M. Lea; Notes on some early plays, by W. W. Greg; Recent bibliographical work in Germany, by E. Crous; Some bibliographical notes on *Massenger*, by A. K. McIlwraith; The beginnings of printing in Abyssinia, by S. Gaselee; *Keep the Widow Waking*, by G. B. Harrison.

The Mariner's Mirror, vol. 16, no. 2, includes:—The corvette *L'Aurore* and its model, by J. Sottas; More light on Drake, by E. G. R. Taylor; Brixham trawlers, by H. O. Hill; Lord Cochrane's secret plans, by Lt. P. W. Brock; British battleships of 1870: The *Warrior* and *Black Prince*, by Admiral G. A. Ballard; The *Santa Maria* of Columbus; Medical officers' uniform.

Vol. 16, no. 3, includes:—British battleships of 1870: The *Bellerophon* and *Hercules*, by Admiral G. A. Ballard; The Order of St. John of Jerusalem, by Paymaster-Lt. W. E. Brockman; The battle of Damme, 1213, by F. W. Brooks; The Katwijk Bomschuit, by D. Verwey; Vestiges of *Oculus* bow ornament; A model of the *St. Michael* of 1669; Fore topmast rigging in 1660; Sands, etc. between Harwich and the Nore; Sea travelling and sailing ships in the Black Sea, c. 1700;

The date of Blankley's 'Name Expositor'; Medieval graffito of a ship in Doncaster church; Graffito of a ship in Winchelsea church; Martnets; Seaman's dress.

Miscellanea Genealogica et Heraldica, vol. 7, part 6, contains:—Sir Thomas Blount, executed in 1400, and the Blounts of Kingston Blount; Pedigree of Kent of Lincoln city (the mayoral family) and of North Hykham, co. Lincoln; Grant of arms, 1821: Wade alias Baseley; Notes from the Register Book of St. Gregory's, London; London pedigrees and coats of arms; Pedigree of Ker of Portavo; Monumental inscriptions in the church and churchyard of St. Mary's, Wimbledon.

In *Notes and Queries* for 12 July 1930 is an article by Dr. F. P. Barnard on the use of the term 'Sir' as a title for priests in the Middle Ages.

The Numismatic Chronicle, 5th series, vol. 10, part 1, contains:—Sinope, by E. S. G. Robinson; The ratio of silver to gold during the Peloponnesian War: I. G., I², 301, by H. T. Wade-Gery; A penny of Beorchtric King of Wessex, by P. Carlyon-Britton; Privy marks in the reign of Henry V, by G. C. Brooke.

Quarterly Statement of the Palestine Exploration Fund, July 1930, contains:—Jericho: Sir Charles Marston's expedition of 1930, by Prof. J. Garstang; Beth Shemesh, 1930, by Prof. E. Grant; The Mount of God, by Rev. W. J. Phythian-Adams; Excavation at the monastery of St. Euthymius, 1929, by Rev. D. J. Chitty; Notes on recent works on Palestinian epigraphy, by Rabbi A. Marmostein.

Journal of Roman Studies, vol. 19, part 2, contains:—Notes on the legislation of Julius Caesar, by M. Cary; Bowls by Acavniassa from Birdoswald, Mainz and Cologne, by F. Oswald; The Augustan 'Vita Aureliani', by W. H. Fisher; The Wilshire Collection at Pusey House in Oxford, by T. B. L. Webster; Roman garrisons and soldiers in Asia Minor, by Sir W. M. Ramsay; The Temple of Castor and Pollux in Rome, by T. Ashby; Clodius and the 'Lex Aelia Fufia', by W. F. McDonald; Roman Britain in 1929, by M. V. Taylor and R. G. Collingwood.

Transactions of the Birmingham Archaeological Society, vol. 52, part 2, contains:—Notes on the Rea valley, by B. Walker; Imitations of early (I–II cent.) Sigillata shapes by late (III–V cent.) Romano-British potters, by T. May; The misericords of Coventry, by Mary Dormer Harris; The Heath Mill, Birmingham, by W. Barrow; Excavations on Corley Camp, near Coventry, by P. B. Chatwin; Discoveries at Alcester; Roman and other sites near Bredon Hill; Prehistoric cooking site and camping ground in Sutton Park, Warwickshire; Cinerary urn from Christchurch, Hants; A Coptic shovel; Dunchurch handcuffs; Rugby tumulus; Roman amphora from Kenchester; Allcock's harbour; Napton; The Rollright stones; Tumulus, Billesley Hall, Warwickshire; Studley priory, Warwickshire; The Hoar stone, Hodge Hill common, Castle Bromwich; Excavations in the Roman cemetery at Wall; Roman villa, Bays Meadow, Droitwich, by H. R. Hodgkinson.

Transactions of the Bristol and Gloucestershire Archaeological Society,

vol. 51, contains :—Lydney, Gloucestershire, by Lord Bledisloe ; Notes on some old Gloucestershire maps, by Brig.-Gen. A. C. Painter ; The battle of Dyrham, A. D. 577, by St. Clair Baddeley ; Lypiatt Cross, by St. Clair Baddeley ; The grant of arms to Queen Elizabeth's hospital, Bristol, 1591, by W. Leighton ; Tyndall's Park, Bristol, by G. Parker ; Sir George Onesiphorus Paul, by Sir Francis Hyett ; The bridges of Gloucester and the hospital between the bridges, by May Heane Ellis ; Abstracts of deeds relating to Chalford and Colcombe, by Mary A. Rudd ; Bristol archaeological notes, by J. E. Pritchard ; Ebbworth manor, by St. Clair Baddeley ; Archaeology of Bisley hundred, by Rev. R. Jowett Burton ; Belas Knapp Long Barrow : report by W. J. Hemp ; Belas Knapp Long Barrow : report on the excavations of 1929, by Sir James Berry ; Clock and watch makers of the eighteenth century in Gloucestershire and Bristol, by F. Buckley and G. B. Buckley ; Members of Parliament for Gloucestershire and Bristol, 1900–29, by Sir Francis Hyett and C. Wells.

Records of Buckinghamshire, vol. 12, no. 4, contains :—Some recent discoveries at King John's Lodge, Wraysbury, by E. C. Rouse ; Farm accounts—late fourteenth century, by E. Hollis ; Memorial to Lipscomb ; An Eton boy's letters ; Recent discoveries at Notley abbey ; Fulmer : site of the old parish church ; Chalfont St. Peter : more evidence of the medieval church ; Maltmar Green, Denham.

Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society, new series, vol. 30, contains :—The medieval fence at Rydal and other earthworks, by W. G. Collingwood ; Penrith castle, by F. Hudleston ; Skelton, by T. H. B. Graham ; Servile tenures, by T. H. B. Graham ; The parish of Stapleton, by T. H. B. Graham ; The Huttons of Cumberland, by T. H. B. Graham ; Some deeds relating to Cumberland, Westmorland and the Furness district, by Col. W. H. Chippindall ; A silver seal ring, by H. S. Cowper ; The Roman fort at Watercrock, Kendal, by R. G. Collingwood ; A system of numerical references to the parts of Hadrian's Wall and the structures along its line, by R. G. Collingwood ; Five notes: i, The Maiden Way, ii, The southern end of High Street, iii, A clay statuette from Bootle-in-Cumberland, iv, Another forged rock inscription, v, The so-called Roman bridge at Lanercost, by R. G. Collingwood ; The Hall in Kirkby Lonsdale, by Col. W. H. Chippindall ; Hartside Cross, by K. E. Porter ; Crewgarth, by W. G. Collingwood ; The art of the English plasterer as exemplified in Cumberland and Westmorland, by J. F. Curwen ; Explorations in Ravenstonedale, ii, by E. Frankland ; Excavations at Conishead priory, by P. V. Kelly ; Excavations on Hadrian's Wall in the Birdoswald–Pike Hill section, 1929, by I. A. Richmond, E. B. Birley, and F. G. Simpson ; Flint implement found at Ash Fell, Ravenstonedale ; An ancient site at Mecklin Park, Wastdale ; A Roman lamp from Ravenglass ; Scoria from Gilderdale Fell ; A Samian bowl by Agunissa from Kirkby Thore ; The Grahams of Esk.

Proceedings of the Devon Archaeological Exploration Society, vol. 1, no 1, contains :—A note on Hembury fort, by Gertrude MacAlpine Woods ;

Our prehistoric camps, by C. A. R. Radford; The problem of Roman Exeter, by V. E. Nash-Williams; A Stone Age site in East Devon, by Gertrude MacAlpine Woods.

Proceedings of the Prehistoric Society of East Anglia, vol. 6, parts 1 and 2, contains:—Palaeolithic implements from the Cannon-shot gravels of Norfolk, by J. Reid Moir; Note on the relationship of palaeolithic man to the glacial period, by J. Reid Moir; The flint industries of Bapchild, by H. G. Dines; Pin Hole Cave excavations, Creswell Crags, Derbyshire: Discovery of an engraved drawing of a masked human figure, by A. L. Armstrong; Neolithic pottery and other remains from Pangbourne, Berks. and Caversham, Oxon., by S. Piggott; Discoidal polished flint knives, their typology and distribution, by J. G. D. Clark; The problems of the Crag, by J. E. Sainty; A double-ended rostro-carinate flint implement, by J. Reid Moir; On the Clactonian industry at Swanscombe, by R. H. Chandler; The dimensions of flint implements, by A. S. Barnes; St. Acheul implements from high level gravel at Denham, Bucks., by J. A. Marsden; Pigmy burins in Surrey and Sussex, by W. Hooper.

The Essex Review, July 1930, includes:—Some discoveries at Bradfield church, by Rev. T. D. S. Bayley; Sir Francis Hubert and the Hubert family of Stansted Montfichet Hall, by Col. Carwardine-Probert; Dedham in the seventeenth century, by Canon G. H. Rendall; The Colchester Volunteers, by A. Hills; Walton on the Naze sixty years ago, by Henry Smith; Monastic elections under Edward III, by Dr. Harold Smith; Rykedon chantry; Witchcraft trials in Essex; Palfrey money; An unidentified school: Notes from bishops' registers; A breach of sanctuary; Munt in Essex; The bridge of Stratford in Bradwell; Kentish farm, Stisted; The parish of High Easter, by Rev. E. Gepp.

Bulletin of the John Rylands Library, vol. 14, no. 2, includes:—The authorship of the Fourth Gospel, by A. Mingana; Romanticism in Shakespeare's comedy, by H. B. Charlton; The originality of Cicero, by R. S. Conway; The fifteenth century: some recent interpretations, by E. F. Jacob; William Caxton, writer and critic, by W. W. Roberts.

Transactions of the Newbury District Field Club, vol. 6, no. 1, includes:—A Romano-British settlement at Thatcham-Newtown, Berks., by W. E. Harris; Some unsolved problems in the Newbury district, by H. Peake; Kintbury skeleton, no. 1, by A. R. Sansbury; Kintbury skeleton, no. 2, by F. G. Parsons; Speenhamland skeleton, by F. G. Parsons; Samian cup from Pyle Hill, Greenham; Recent acquisitions of local interest in the Newbury Museum, by H. Peake.

Transactions of the Thoroton Society, vol. 33, contains:—East Chilwell and Keighton, by A. Cossons; All Saints church, Gedling, by C. M. Oldrid Scott; An assessment of St. Mary's church, Nottingham, by F. A. Wadsworth; An itinerary of Nottingham, by J. Holland Walker; A list of words illustrating the Nottinghamshire dialect, by E. L. Guilford; The church bells of Nottinghamshire, by Rev. R. F. Wilkinson; Southwell Minster: the inscription on the tombstone in the north porch.

Archaeologia Aeliana, 4th series, vol. 7, contains:—Medieval effigies in Northumberland, by C. H. Hunter Blair; A contemporary record of

the pontificate of Ranulf Flambard, by H. H. E. Craster; The watch and clock makers of Northumberland and Durham of the seventeenth and eighteenth centuries recorded in newspapers, directories, etc., by F. Buckley; Roger Bertram's lands in Brenkley and Benwell, by A. F. Radcliffe; A memoir of the late Herbert Maxwell Wood, by F. W. Dendy; A second calendar of Greenwell deeds; A memoir of the late David Dippie Dixon, by E. R. Newbigin; Prior Leschman's chantry chapel in Hexham priory church, by C. H. Hunter Blair; The treasure vault of the Roman fort at Benwell, by G. R. B. Spain; The Northumbrian bag-pipes, by G. V. B. Charlton; Excavations on Hadrian's Wall west of Newcastle upon Tyne in 1929, by E. B. Birley; A Samian bowl in the possession of the University of Durham, by Rev. C. E. Whiting; A memoir of the late Joseph Oswald, by F. W. Dendy; A gold fede-ring brooch, by Parker Brewis.

Transactions of the St. Albans and Hertfordshire Architectural and Archaeological Society, 1929, contains:—A picture in St. Albans cathedral, by W. H. Fairbairns; St. Albans in the early nineteenth century, by E. S. Kent; The wooden watching loft in St. Albans abbey church, by E. Woolley; Queen Eleanor of Castile, by Hilda M. M. Lane; The symbolism of the brass of Thomas de la Mare, by Rev. H. O. Cavalier; A Hertfordshire trial for witchcraft, by C. E. Jones.

Proceedings of the Suffolk Institute of Archaeology, vol. 20, part 2, contains:—The family of William Sancroft, by C. Boyce; Windmills, by A. Woolford; The Dunthorne MSS., by Rev. E. Farrer; Everard, bishop of Norwich, by L. Landon; Suffolk courts in English, by Sybil Andrews and Lilian Redstone; Screenwork in the county of Suffolk, by W. W. Lillie; The Lord Lieutenants of Suffolk, by Miss Scott Thomson; Fossil remains of the red deer, by V. B. Redstone.

Sussex Notes and Queries, vol. 3, no. 2, includes:—A new Roman site at Wiggonholt, by S. E. Winbolt; Thomas and Brian Twine, by W. H. Godfrey; The churchwardens' accounts of West Tarring, by Rev. W. J. Pressey; 'Portraits' of Henry VIII; Sussex ploughs, by F. Harrison; St. Denys, Rotherfield; Sussex entries in London Parish Registers, by W. H. Challen; Etchingham church; An Aldingbourne marriage; Money changer's weight; Chichester: Roman buildings; James Dallaway; Neolithic mace head from Walberton; Bulverhithe; Coldharbours.

Wiltshire Archaeological Magazine, June 1930, includes:—The origin and history of the Wiltshire Archaeological and Natural History Society, by Capt. B. H. Cunnington; Magna Carta in Salisbury cathedral library, by Canon Christopher Wordsworth; Wiltshire Wills, etc. still preserved in the Diocesan Registry, Salisbury, by C. R. Everett; The Sacraments window in Crudwell church, by G. McN. Rushforth; A probable source of the material of some Wiltshire prehistoric axe-hammers, by Rev. G. H. Engleheart; Stone coffin, apparently Roman, at Bradford-on-Avon; Marlborough bill of fare; Shorncliffe church; Stone cannon balls at Clyffe Pypard manor; Thirteenth-century coffer; Salisbury cathedral; Bradenstoke barn demolished; Carved stone found

at Bradenstoke; Cinerary urn and bronze dagger from barrow on Roundway Down; Unrecorded long barrow at Imber; Saxon burials at West Chisenbury; Netheravon petition against the vicar, 1681; Sarsen stones at Kingston Deverell; Glazed flints; A Great Bedwyn breviary; Greenstone celt of Breton type; The mount at Great Somerford; Bronze seal found at Market Lavington; Early Iron Age bronze horse-bit roller.

The Yorkshire Archaeological Journal, vol. 30, part 1, contains:—The Register of the Archdeacons of Richmond, 1442–77, edited from MS. Latin. 333 in the John Rylands Library at Manchester, with introduction and notes by A. Hamilton Thompson; part 1, 1442–65.

Transactions of the East Riding Antiquarian Society, vol. 26, contains:—Early means of transport in the East Riding, by T. Sheppard; Wyke-upon-Hull in 1293, by John Bilson; Meaux abbey, by T. Sheppard, with an appendix on the paving tiles, by G. K. Beaulah; Ancient land tenures in Howdenshire by Col. P. Saltmarshe.

Proceedings of the Society of Antiquaries of Scotland, vol. 63, contains:—Scottish Neolithic pottery, by J. Graham Callander; A unique relic of Rodney and the battle of the Saints, by Rev. L. P. Hope; The early castles of Mar, by W. D. Simpson; Excavations at Reay Links and at a horned cairn at Lower Dounreay, Caithness, by A. J. H. Edwards, with reports on the human and animal bones, by Prof. A. Low and R. M. Neill; A jet necklace from a cist at Paltalloch, Argyll, by J. H. Craw, with the following appendices:—A bibliography of antiquities in the Paltalloch district; A report on bones from cists at Paltalloch, by Prof. T. H. Bryce; Details of the construction of the necklace; A table of English jet necklaces; Gold in Scotland and Ireland, and An examination of other sites at Paltalloch; A short cist at West Puldrite, in the parish of Evie and Rendall, Orkney, by J. M. Corrie, with a report on the human remains by Prof. A. Low; A Celtic god on a Scottish sculptured stone, by D. A. Mackenzie; A short cist at Culduthel, Inverness, by Prof. A. Low; Provisional report on the excavations at Skara Brae, and on finds from the 1927 and 1928 campaigns, by Prof. V. G. Childe and J. W. Paterson, with a report on bones by Prof. T. H. Bryce; A thirteenth-century tile kiln at North Berwick, East Lothian, and Scottish medieval ornamented floor tiles, by J. S. Richardson; Land movements in Scotland in prehistoric and recent times, by J. Graham Callander; Ardlui megaliths and their associations, crosses at Luib and Alloway, and a short cist at Ednam, Roxburghshire, by A. D. Lacaille; Note on a supposed flint-worker's site near Findhorn, Morayshire, by Mrs. Duff Dunbar; More cross-slabs from the Isle of Man, by P. M. C. Kermode; Three graves containing urns of the food-vessel type, by J. Graham Callander; The excavation of two cairns on the Knock Hills, Edgerston, Roxburghshire, by Mrs. F. S. Oliver, with a report on the relics found by J. Graham Callander; Some cist-burials in Orkney by H. Marwick, with a report on the human remains by Prof. A. Low; The house of Schivas, Aberdeenshire, by J. F. Wyness; A Bronze Age burial mound at Blair Drummond, Perthshire, by J. Graham Callander; The Roman

fort at Mumrills, near Falkirk, by Sir George Macdonald and A. O. Curle.

Transactions of the Glasgow Archaeological Society, new series, vol. 8, part 2, contains :—Prehistoric graves in the Roman fort at Old Kilpatrick, Dumbartonshire, by J. Graham Callander; Report on a survey of the antiquities on Eileach an Naoimh, by T. H. Bryce and G. A. F. Knight.

Journal of the Royal Society of Antiquaries of Ireland, vol. 6, part 1, contains :—Archbishop Henry of London and his Irish connexions, by E. St. John Brooks; White Island, Lough Erne: its ancient church and unique sculptures, by the Very Rev. Canon McKenna and Lady Dorothy Lowry-Corry; The Court Book of Esker and Crumlin, 1592–1600, by E. Curtis; The Ogham inscription of Hook Point, co. Wexford, by R. A. S. Macalister; Union of the dioceses of Glendaloch and Dublin in 1216, by Rev. M. V. Ronan; Recent acquisitions of archaeological finds made by the National Museum, Dublin, by A. Mahr; Documents found at Castlewhite, co. Cork, by J. J. Fitzgerald and C. McNeill; The casualty list of the Infantry regiment of Albemarle at the battle of Luzzara, 1702, by the Marquis MacSwiney of Mashanaglass.

Archaeologia Cambrensis, vol. 85, part 1, contains :—Offa's Dyke: a field survey, fifth report, by C. Fox and D. W. Phillips; Excavations on the site of the Roman fort at Caerhun, fourth interim report, by P. K. Baillie Reynolds; The romance of place-names (Manx), by J. J. Kneen; The Forden gaer, third interim report, by F. N. Pryce and T. Davies Pryce; Notes on the political history of early Powys, by G. P. Jones; The Roman legionary fortress at Caerleon in Monmouthshire: report on the 1929 excavations in the East corner, by C. Hawkes; The case of Robert Robothan, archdeacon of Llandaff, by Sir J. Bradley; Arrowheads and flints from Bugeilyn, by I. C. Peate; The Hirradug shield, by W. J. Hemp; Grooved stone found in Bangor, by H. H. Hughes; Mullers or grinding stones from Braich y Dinas, by H. H. Hughes; Stone axe found near Pembroke, by A. G. O. Mathias; Hammer-stones from the Castlemartin floors, South Pembrokeshire, by A. G. O. Mathias; Some Pembrokeshire customs, by J. D. Polkinghorne; The Welsh wedding 'bidding'; Wooden dog-tongs from Anglesey, by I. C. Peate; Polished stone axes from Cowbridge and Welsh St. Donats, Glamorgan; Conway church: eighteenth-century documents; Caerleon excavations, 1929, by V. E. Nash-Williams.

Bulletin of the Board of Celtic Studies, vol. 5, part 2, includes :—Two early Caernarvonshire accounts: i. Lay subsidy account 242–50 B [A. D. 1293], ii. Section of Minister's account (sheriff) 1170–5 [A. D. 1306–7], by T. Jones-Pierce; Trouble in Wales about 1410, by J. E. Lloyd; The Samian potters' stamps found at Caerwent (Venta Silurum) in Monmouthshire, by V. E. Nash-Williams; Current work in Welsh archaeology.

Journal of the Manx Museum, vol. 1, no. 23, includes an interim report on the examination of certain of the ancient buildings on St. Patrick's Isle, by Canon J. Quine.

The Indian Antiquary, May 1930, contains :—Some remarks on the

Bhagavadgita, by Prof. J. Charpentier; Origin of the caste system in India, by the late S. C. Hill; Periods of Indian History, by F. J. Richards; The social and ceremonial life of the Santals, by B. Bonnerjea; The Scattergoods and the East India Company, by B. P. Scattergood and Sir R. C. Temple.

June 1930, contains:—The social and ceremonial life of the Santals, by B. Bonnerjea; Some remarks on the Bhagavadgita, by Prof. J. Charpentier; Rustamji Manak: a notable Parsi broker, by Harihar Das; Some additions to the Lalla-Vakyani, by Pandit Anand Koul; Nature study in the Sanskrit poem Meghaduta, by Lily D. Greene.

July 1930, contains:—Some remarks on the Bhagavadgita, by Prof. J. Charpentier; Some additions to the Lalla-Vakyani, Pandit Anand Koul; A Hebrew inscription from Chennamangalam, by P. Anujan Achan; Rustamji Manak: a notable Parsi broker, by Harihar Das; Bramaha and Dinnaga, by Prof. G. Tucci.

August 1930, contains:—Pindari, by Prof. J. Charpentier; a further note on the Svetambara and Digambara sects, by Kampta Prasad Jain; The origin of the Pallavas, by Mudaliyar C. Rasanayagam; The culture of medieval India as illustrated by the Ajanta frescoes, by K. de B. Codrington; Chitor and its sieges, R. R. Halder; The mystery and mental atmosphere, by Sir R. C. Temple.

The American Journal of Archaeology, vol. 34, no. 2, contains:—The departure of Alcibiades for Italy, by B. D. Meritt; Five red-figured vases in the Art Institute of Chicago, by D. C. Rich; The lasso on a pyxis in the style of the Penthesilea painter, by D. M. Robinson; Maya chronological systems, by R. B. Weitzel; Antique fig-beads, by G. A. Eisen.

Bulletin of the Museum of Fine Arts, Boston, June 1930, includes:—A bronze jar of the early Han period, by Kojiro Tomita; The art of seal carving in Egypt in the Middle Kingdom; Two Pallava marble pillars, by A. Coomaraswamy.

August 1930, includes:—A pastoral Paradise, by A. Coomaraswamy; The portraiture of the Massachusetts Bay Colony; Furniture of the Bay Colony, by E. J. Hipkiss; The Hancock cup: Tetradrachm of Demetrius Poliorcetes, by Agnes B. Brett.

Proceedings of the Massachusetts Historical Society, vol. 62, includes:—Some forgotten political essays by Lowell, by C. M. Fuess; Bradford's portrayal of a religious rival, by C. E. Banks; Two 'Signers' on salaries and the Stage, 1782, by S. E. Morison; 'Yaratildia', a note on Abiel Holmes, by M. A. De W. Howe; Senator Webster goes South, by C. M. Fuess; The Book of America, by A. Matthews; Two Washington miniatures, by G. G. Wolkins; The Founding of Massachusetts: a selection from the sources of the history of the Settlement, 1628-31.

Old-Time New England, vol. 21, no. 1, contains:—Some Salisbury family portraits, by Harriette M. Forbes; The Old Ship meeting-house in Hingham, Mass., by M. P. Corse; The West Barnstable Congregational church, by Elizabeth I. Samuel; The meeting-house at West Barnstable, Mass., by E. B. Goodell, jr.

Mitteilungen der Anthropologischen Gesellschaft in Wien, Band 60,

Heft 2/3, includes:—The early Bronze Age cemetery at Hainburg-Teichtal, by E. Beninger, F. Mühlhofer, and E. Geyer; A late Hallstatt cemetery in the township of Linz, Upper Austria, by P. Karnitsch; The last stage of the diluvial plastic representation of women, by J. Bayer; The discovery of a second memorial by Fray Alfonso de Benavides, by Mr. Gusinde.

Wiener Prähistorische Zeitschrift, 17, 1, contains:—The early Ice Age in Europe, by F. Machatschek; Aurignac culture in Bessarabia and the Bukovina, by C. Ambrozewicz; The Hetzer prehistoric collection, by J. Caspart; Early La Tène tumuli at Maxglan near Salzburg, by M. Hell; The typological grounds for the age of the Kuckucksbad site, by L. F. Kotz; Later neolithic ornamented bone objects from the Zwergloch at Bad-Fischau, by F. Mühlhofer; A grave of the Hötting culture at Kleinmünchen near Linz, by P. Karnitsch.

Académie Royale de Belgique: Bulletin de la Commission Royale d'Histoire, tome 93, parts 2, 3, and 4, contain:—Additional documents concerning the history of the cloth trade: Flanders, by G. Espinas and H. Pirenne; Documents concerning the policy of the Dukes of Brabant and Burgundy in the duchy of Limbourg the Outre-Meuse during the second half of the fifteenth century (1364–96), by F. Quicke; The *Chronicon Bethlehemiticum* of Pierre Imperes, by H. Nélis; The commercial correspondence of Francesco Gasparini, by M. Battistini.

Académie Royale de Belgique: Bulletin de la Classe des Lettres, tome 16, no. 3, contains:—The part of Chrétien de Troyes in the composition of the Grail, iii, by M. Wilmotte.

Analecta Bollandiana, vol. xlviii (1930), fasc. I and II. 'Loca Sanctorum', by H. Delehaye; A comprehensive review of the history of church dedications in Latin Europe, from Italy to the Orkneys, with bibliographies. Latin Translation of a Georgian (MS. at Mt. Athos) Passion of St. Michael, a young monk from the monastery of St. Saba in Palestine, martyred at Jerusalem under the Caliph Abd al-Malik, with historical commentary, by P. Peeters; The life of St. Brendan of Clonfert from a Dublin MS. (not published by Plummer), by P. Grosjean; P. Mousterde shows that the name of the colleague of Abundius, bishop of Como, sent by St. Leo on a mission to Constantinople in 450, is not Asterius, as printed in the Letters of Leo, but Aetherius, a hitherto unnoticed bishop of Capua; Life of B. Raymund Lull (1232–1315) of Majorca, edited by B. de Gaiffier. Among the books reviewed are the first volume of Mgr. Wilpert's *Corpus of Christian Sarcophagi*, and vol. i of J. F. Kenney's 'Sources for the early history of Ireland.'

Bulletin des Musées Royaux, Parc du Cinquantenaire, March 1930, includes:—A fourteenth-century liturgical hand-warmer, by M. Laurent; A glass vase from Amarna, by M. Werbrouck; A new Sumerian seal, by L. Spéleers; Two fragments of a Maya statue, by H. A. Lavorchery; The tapestries with the legend of Notre-Dame du Sablon, by O. le Maire.

May 1930, includes:—A signed statuette by the Malines sculptor Jean van Doorne, by M. Laurent; The *Sedes Sapientiae* group of the Virgin and Child in the Jules van den Peereboom bequest, by J. Destrée; Egyp-

tian Arab ceramic, by A. Abel; Eighteenth-century Brussels lace, by L. Paulis; Jewel from a Frankish grave in the province of Namur; A Merovingian ring from Tournai; The exhibition of prehistoric art; The State excavations at Spiennes.

July 1930, includes:—A gift by H. M. the Queen [a royal statuette of the XVIIIth dynasty], by J. Capart; Terra cotta statuette of Eros, by F. Mayence; The phylacteries of Hugo d'Oignes, by F. Courtoy; The dating of eighteenth-century Liège furniture, by Comte J. de Borchgrave d'Altena; Arab ceramics from Egypt, by A. Abel; The tapestries with the legend of Notre-Dame du Sablon, by M. Crick-Kuntziger; Excavations of a fourth-century Roman fort at Morlanwelz, by J. Breuer.

Acta Archaeologica, vol. i, part 1 (Copenhagen: Levin & Munksgaard, 1930). Annual subscription, one guinea. This first number of a publication intended to represent Northern archaeology is produced on sumptuous lines and is supported by the following well-known scholars—Boëthius, A. W. Brøgger, Friis Johansen, Lindqvist, Nordman, Nørlund, Shetelig, and Thordeman, with Brøndsted as editor. There are to be three parts annually and the articles are in various languages. Our Hon. Fellow Haakon Shetelig writes in German on the Nydam ship; F. Poulsen in French on three antique marble heads from the New Carlsberg Glyptothek; Friis Johansen in German on Seleucid clay-bullae from Warka; and Otto Rydbeck in English on the earliest human settlement of Scandinavia (cf. *Fornvännen*, 1930, p. 21). Among the miscellanea are some disputed points in Babylonian sacred architecture, and a summary of recent research at Sigluna (both English); also an illustrated paper in French on bone-carving in Norway and Iceland from ancient to modern times.

Eurasia Septentrionalis Antiqua, vol. 5, contains:—The Anau and Namazga Tepe, by D. D. Bukinič; Scythian civilization and Hallstatt, by N. Makarenko; Vases from Juck, by M. Jegorow; The Hungarian affinities of the finds from Ksp. Perniö, S. W. Finland, by N. Fettich; The skeletal remains from Körösladány, by L. Bartucz; Antiquities from the valley of the middle Inja, by A. Kuznecova; The osteological material from the graves of the middle Inja, by V. I. Gromov; Finds of the Roman Iron Age in the Novgorod Government, by B. V. Alexandrov and A. M. Tallgren; Caucasian monuments: the Kazbek Treasure, by A. M. Tallgren; Contributions to Caucasian archaeology: a large barrow in Daghestan, by A. A. Zakharov; Skulls from stone cists at Temir-Chan-Sura, by A. A. Zakharov and V. V. Sergejev.

Suomen Museo, vol. xxxvi, includes:—The Stone Age habitation site at Honkaniemi, by A. Europaeus; A prehistoric cemetery in the district of Sairila, by M. Westerholm; The church of Kaarina, by I. Kronqvist; Finnish bird-headed spoons and dishes, by I. Manninen; Portraits by Isak Wacklin, by K. K. Meinander; New finds of Stone Age art, by A. Europaeus.

Finskt Museum, vol. xxxvi, includes:—The Havnelev find, by C. A. Nordman; The mediæval wall-paintings in the church of Rimito, by S. Rinne; Finnish Iron Age strike-a-lights with bronze handles, by N. Clewe; The first Germans, by A. Nordling.

Suomen Muinaismuistoyhdistyksen Aikakauskirja, vol. 37, includes:—Perforated axes of the Stone Age from the geological and petrographical standpoint, by A. Laitakari.

Vol. 38, contains:—Gothic painting in the churches of West Finland and Åland, by L. Wennervirta.

Bulletin de la Société Nationale des Antiquaires de France, 1929, contains:—The Cluniac church at Lewes, England, by J. Vallery-Radot; Correction in the text of Festus on the Ovinian plebiscite, by J. Carcopino; Seal-matrix with the Appearance of our Lord to the Magdalen, by M. Prinet; Epitaph on Petale, J. Carcopino; The excavations at Mishrif, by Comte du Mesnil du Buisson; Note on an inscription in the cloister at Vaison, by C. Bruston; Representations of the human figure without mouths in the palaeolithic age, by Comte Bégouen; The engraver of the Fontainebleau school called Léon Davent, by L. Dimier; The church of Valcabrière, by F. Deshoulières; The Vaison inscription, by F. de Mély; The meaning of the word billon, by A. Dieudonné; The engraving of the armorial seal of Gaston II de Foix, by E. Martin-Chabot; Table of the *Olim* and of the registers of the Council of the beginning of the seventeenth century, by J. Meurgey; The Sumerian chariots of Ur, by Commandant Lefebvre des Noëttes; Reconstruction of the Trophy of Augustus at La Turbie, by J. Formigé; The early church of St.-Germain-des-Prés, by F. Deshoulières; The laws of the Christian Emperors regarding sacrilege, by J. Maurice; The date of the marriage of Octavius and Livia, by J. Carcopino; Funerary *encolpion* from Saint-Palais, by F. de Mély; A Limoges enamel cup with the arms of Mary Stuart, by J. Babelon; Correction in the text of Pliny's *Natural History*, xxxv, 70, by J. Carcopino; A new fragment of the Orange cadastral inscription, by J. Formigé; An inscription from Tarentum to C. Umbrius, *haruspex Caesarum*, by P. Willeumier; Medieval systems of numeration, by A. Dieudonné; Gaulish cemetery at Étoges, by Marquis de Baye; Iconography of the primitives in the Bard collection in the Dijon museum, by L. Réau; The priory church of Grandmont Châteauneuf, by F. Deshoulières; Bridle bits from the neolithic period to the tenth century, by L. Coutil; The laurel crown and diadem on busts of Apollo and Artemis, by A. Dieudonné.

Bulletin de la Société Préhistorique Française, tome xxvii, no. 5, Mai 1930. Vase-supports of pottery are discussed in two articles by J. J. Thomasset and Miss Guignard, and seem to range from the earliest Bronze Age to the latest Hallstatt period. The former writer interprets some of the British incense-cups in this way, but the type is evidently much rarer here than abroad, and those from the Camp de Chassey are of special interest. There are also squared examples, presumably for the same purpose. Miss Labitte discusses the handling of certain Chelles and St. Acheul types of flint, and confirms the published views of Gabriel de Mortillet. The palaeolithic deposits at Abou-el-Nour, near Nag-Hamadi in Upper Egypt, are described and illustrated by Edmond Vignard. He combines the Chelles and St. Acheul stages, and distinguishes

a Le Moustier industry, which is different from that of central France, though the Levallois technique is common to both areas.

L'Anthropologie, tome xl, nos. 1-2. Some interesting finds of the palaeolithic period in the cave of La Roche, near Lalinde in the Dordogne, are illustrated in an article by M. Peyrony; and Stone Age deposits of Le Kaarta in the French Soudan are described by Dr. Raymond Turon. The French *disque* (no. 1 of his fig. 3) is often a struck tortoise-core of Le Moustier date. A long article on the stone-avenues of Carnac by Alexandre Baschmakoff reviews the literature and brings them once more into connexion with solar observations (see another note on p. 202). The Abbé Lemozi's work on the cave-temple of Pech Merle is reviewed by the editor, who also notices V. Antoniewicz's *Archaeology of Poland* and Prof. Rellini's work on the Origins of Italian civilization (pp. 124, 141). Attention is drawn on p. 143 to the list of prehistoric sites in Palestine and Transjordan published in the *Journal of the Palestine Oriental Society*, and prehistoric South Africa is discussed on pp. 144 and 205. Human palaeontology in East Africa is noticed in the light of Mr. Leakey's discoveries (p. 206).

Revue Archéologique, tome 31, Janv.-Avril 1930, contains; Phoenician tombs at Djidjelli, Algiers, by J. and P. Alquier; The supposed statue of Jesus and the woman with the issue of blood at Panéas, by R. Eisler; Monsters with common organs, by W. Deonna; Reconstitution of the geographical co-ordinates of Ptolemy on the Atlantic littoral, by Comte Derancourt; The Roman helmet from the Caverna delle Mosche, by P. Couissin; Statues and statuettes, by S. Reinach.

Revue Anthropologique, Avril-Juin 1930, nos. 4-6. The continuation of M. Peyrony's paper on Le Moustier, its deposits, industries, and geological strata is the only archaeological item, and has adequate illustrations. The two terraces were evacuated simultaneously by people with the same industry, and then reoccupied by others of Le Moustier type, with an industry different from that of their predecessors. A deliberate burial of a child of the period in a pit is described; and the local Aurignac deposit is classified, the hand-axes being small and scarce. The presence of small *tranchets* is noticed, as at La Ferrassie. Both disc (tortoise) cores and prismatic cores are found at this horizon. A fine leaf-shaped blade, nearly 3 in. long, of early Solutré type is also figured. The complete erosion of the Vézère valley is said to date immediately after the Riss glaciation; and Le Moustier man is traced back to that glaciation. The Levallois industry seems to be more closely connected with that of St. Acheul. An article on amulets and talismans will be of interest to students of folk-lore.

Aréthuse, vol. 16, no. 2, includes:—Lid of money-box dedicated to the goddess Atargatis, by F. Cumont; Diva Julia Pia, by C. Albizzati; A find of ancient coins near the village of Reka-Devnia (Marcianopolis), by N. A. Mouchmov.

Bulletin de la Société de reproductions de manuscrits à peintures, 13^e année, contains:—The 'Douze dames de Rhétorique' (MS. 1174 in the Bibliothèque Nationale), by Comte de Rosanbo; The Virgil in the Biblioteca Riccardiana at Florence, by T. de Marinis and F. Rossi.

Bulletin de la Société scientifique, historique et archéologique de la Corrèze, tome 51, part 2, contains:—The church of Arnac-Pompadour, by A. de Laborderie; The Vicomté of Turenne and its cession to the Crown, by G. Soulié; Colonel Antoine Lagorsse, by L. de Nussac; The situation in Bas-Limousin at the beginning of the Revolution, by J. Lalande; The canton of Larche during the Revolution, by R. Laffon; Open air prehistoric stations at Cublac, by Abbés Bouyssonie, A. Cheynier, and M. Leygonie; Excursion in the Dordogne valley, by H. Delsol.

Bulletin historique de la Société des Antiquaires de la Morinie, no. 282, contains:—The chronicle of Alard Tassar, religious of St. Bertin, by Dr. Lanselle.

Römische Mitteilungen, vol. xlv (1929), parts 3-4. Obituary notices of F. Studniczka, K. J. Beloch, E. P. Warren, J. Marshall, and R. Lanciani, by L. Curtius; A Republican female portrait-head at Oslo compared with others of the same type, including the so-called Cleopatra in the British Museum, by H. P. L'Orange; Head of Diocletian, stolen from a statue at the Villa Doria-Pamphili (now restored), perhaps connected with his triumph at Rome in 303, by the same; A new interpretation of the Pompeian graffito inscribed 'Campani victoria una cum Nucernis peristis', by K. Hinze; The statuette of a beardless Christ in the Terme Museum, with a discussion of the forms and origin of the youthful type of Christ, by O. Thulin; The forms and use of windows in Roman houses, especially at Pompeii, by R. Herbig.

Bullettino Comunale di Roma, lvi (1928), fasc. 1-4. A collection of small bronze figures, amulets, etc., found in a tomb and published by F. Bianchini in 1697, now in the Naples Museum, apparently connected with foreign cults (Cabiri) of the third century, by G. Q. Giglioli; A marble fragment in the Terme Museum representing the death of Penthesilea, by L. Mopurgo; Detailed description of two (possibly three) archaic Italian temples discovered on the acropolis of Lanuvium in 1914, by A. Galiati; Fragments of inscriptions from the Basilica of San Valentino on the Via Flaminia, and an unfinished fourth-century sarcophagus from the neighbouring cemetery representing Peter (not Christ) on his way to be crucified, by O. Marucchi; The development of the city of Caesena (Cesena), called 'Curva' in the Itineraries from the course of the Via Emilia round the base of the original fortress, by A. Solari. P. Spezi shows that the real reading of the Paris Catalogue of Roman churches in 1270, on which Hülsen based his theory of the church 'S. Laurentii post S. Gregorium', is *p(ost) s(anctum) m . . .*, which he interprets as *Marcum*, in which case the church and the 'arcus stillans' connected with it would be near the Tiber and the Ripa Graeca. A statue of Athena, of a type known by copies in the Conservatori Museum and at Brocklesby Park, by G. Q. Giglioli; A new copy of the Muse Polymnia (Berlin, Dresden, etc.) found outside the Porta Maggiore, by D. Mustilli; A portrait herm at Venice, of which there are numerous reproductions, probably representing Menander, by T. Campanile; The terra cotta decorations (various epochs) found in the archaic temple at Lanuvium (see above), probably dedicated to Juno Sospita, by

A. Galiati; Extent and development of Parma in Roman times, by R. Andreotti; A Greek inscription from Gortyna in honour of C. Rubellius Blandus, governor of Crete, of about 30 B.C., by M. Guarducci; Unpublished inscriptions from Rome at Prague, mostly epitaphs of freedmen, but one is a fragment of a 'rose of the winds' (anemoscope) and regions of the sky. G. Mancini describes recent finds in Rome of a Christian 'tabula lusoria', a dedication to L. Cassius Longinus, consul 30 A.D., by the citizens of Arles (Sextani Arelatenses), and epitaphs.

Notizie degli Scavi, 6th Ser. v (1929), fasc. 10-12. Veii, tombs of the Villanovan and later periods, by E. Stefani; Rome, two double herm heads of Greek marble from the site of a Roman villa on the Via Appia Nuova, one pair representing Hades and Persephone, the other Menander (as generally accepted) and probably Aristophanes, by R. Paribeni. A. Maiuri describes recent results from Pompeii, with many illustrations. In Reg. I, Ins. VII, a house with paintings of landscapes, the wedding of Mars and Venus, Hylas captured by the Nymphs. The walls of the garden are treated realistically with palms, shrubs, and flowers, seen through a porticus with transennae. Next door is a shop with an upper story lighted by a large window and a smaller one with its iron grating. The excavation of the house of P. Paquius Proculus has been completed. In the middle of the peristyle were traces of the wooden dinner couches, and in an adjacent room a mosaic of Silenus. In Insula VI were found in a shop the lion legs of a marble table inscribed with the name of P. Casca Longus, perhaps the conspirator against Caesar. Another house of some importance has mural decorations in the latest style, including scenes from tragedies and comedies. Here also was a bronze statuette of Apollo (archaic type), and a silver goblet richly decorated with Tritons and Nereids in relief. M. Della Corte adds an excursus on the epigraphic material. In the house of P. Paquius Proculus were several mentions of Nero, including a date in the month (April) named after him (Suet. *Nero*, 55), showing his popularity with the family, as with Pompeii generally.

Bolleti de la Societat Arqueològica Luliana, April 1930, includes:—Description of the coins of the Roman Republic, by L. Ferbal y Campo; Knights of Majorca, by J. de Oleza y de Espana; Leprosy in Majorca in the seventeenth century, by E. Fajarnés Tur; Notes on the ecclesiastical history of Majorca, by J. Rullán; Constitutions and ordinances of the kingdom of Majorca, by A. Pons; Documents dealing with the history of Arba, by J. Ramis de Ayreflor y Sureda; Diary of Don Gaspar Melchor de Jovellanos, by J. L. Bernal.

May 1930, includes:—Knights of Majorca, by J. de Oleza y de Espana; Notes on the ecclesiastical history of Majorca, by J. Rullán; The Grand Masters of the Order of San Juan Rafael, by M. Ribas de Pina; Records of the island of Cabrera by E. Fajarnés Tur.

June 1930, includes:—Knights of Majorca, by J. de Oleza y de Espana; The Grand Masters of the Order of San Juan Rafael, by M. Ribas de Pina; Constitutions and ordinances of the kingdom of Majorca, by A. Pons; Coins of the Roman Republic, by L. Ferbal y Campo;

Records of the island of Cabrera, by E. Fajarnés Tur; Documents dealing with the history of Arta, by J. Ramis de Ayreflor y Sureda; Diary of Don Gaspar Melchior de Jovellanos, by J. L. Bernal.

Fornvånnen, 1930, häfte 2. A Runic gravestone with human figures and decoration in the late Ringerike style was found at Sanda in Scotland about 1863 and published by George Stephens, but is now more fully treated by Hugo Jungner, who dates it about 1050. Arthur Norden discusses the age and origin of the stone lines which pass over all kinds of country in central Sweden and are often connected with single or multiple burials. Three barrows have been examined and referred respectively to the latest Bronze or earliest Iron Age, to the Migration period, and to the latest Vendel or earliest Viking period. More carvings by Henning von der Heide (late fifteenth century) are recognized by V. Thorlacius-Ussing in Sweden and Denmark. Otto von Friesen's work on Swedish runes is reviewed by Elias Wessén.

Häfte 3. Pottery with pointed base and zonal decoration has recently been found in a grave, probably of the late chambered barrow period, in the parish of Fjälkestad, north-eastern Scania; and is described by Folke Hansen. Arthur Norden continues his discussion of stone-lines, and brings them into connexion with sacrifice and the worship of the dead. The earliest cathedral of Lund and local church architecture are the subjects of Erik Lundberg's contribution, and remarks on the runes of the Gallehus horn are offered by Elias Wessén.

Upplands Fornminnesförenings Tidskrift, 43, contains:—The architecture and architectural history of the old arch-diocese of Uppsala, by A. Hahr.

Musée National Suisse, Zurich, 38^{me} *Rapport annuel*, 1929, includes:—A new neolithic lake settlement at Zurich, by D. Viollier; Excavations at the Bronze Age site on the Ebersberg, by D. Viollier; Early medieval jewellery, by H. Lehmann; Representations of saints on Swiss coins, by E. Gerber; Two Zurich heraldic glass panels, by H. Lehmann; Winterthur gild-equipment, by K. Frei.

Annales du Service des Antiquités de l'Égypte, vol. 29, parts 2 and 3, contains:—The work at Karnak, by H. Chevrier; A pectoral amulet, by B. Gunn; Preliminary report on the excavations carried out in 1928–9 in the southern part of the necropolis at Memphis, by G. Jéquier; Some monuments of the IIIrd Dynasty (the step pyramid at Saqqarah), by J. P. Lauer; The votive statuette of a woman in childbed, by W. Spiegelberg.

Vol. 30, part 1, contains:—Geographical researches, by G. Daressy; Excavations at Qantir, by M. Hamza; Hieroglyphs representing birds, by L. Keimer; A Greco-Roman glass head, by G. A. Wainwright and F. A. Bannister; A late Dynastic embalmer's table, by H. E. Winlock; The Ptolemaic system of water supply in the Fayyûm, by S. Yeivin.

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Proceedings of the Society of Antiquaries

Thursday, 8th May 1930. Mr. C. R. Peers, C.B.E., F.B.A., President, in the Chair.

Mr. L. A. Lawrence, F.S.A., exhibited a cameo portrait of King Charles II; Major C. A. Markham, F.S.A., exhibited pottery from the Anglo-Saxon cemetery at Kettering (p. 254); and Mr. W. Fergusson Irvine, F.S.A., exhibited a forester's tenure horn belonging to Lord Cromer.

The following were elected Fellows:—Dr. William Evelyn St. Lawrence Finny, Captain Cordell William Firebrace, Dr. George Lydston Crimp, Canon Rowland Alwyn Wilson, Mr. George Bruce Gosling, Mr. Frank Wallis Tyler, Rev. Thomas Roberts, Mr. Gerald Ambrose Sherwin, Mr. Iltyd Gardner, and as Honorary Fellows, Dom Ursmer Berlière, Dr. Johannes Brøndsted, and Prof. Marcel Aubert.

Thursday, 15th May 1930. Mr. C. R. Peers, C.B.E., F.B.A., President, in the Chair.

The following were admitted Fellows:—Mr. F. W. Tyler, Canon H. J. E. Burrell, Mr. C. F. D. Sperling, Dr. W. E. St. L. Finny, Captain C. W. Firebrace, Dr. G. L. Crimp, and Rev. T. Roberts.

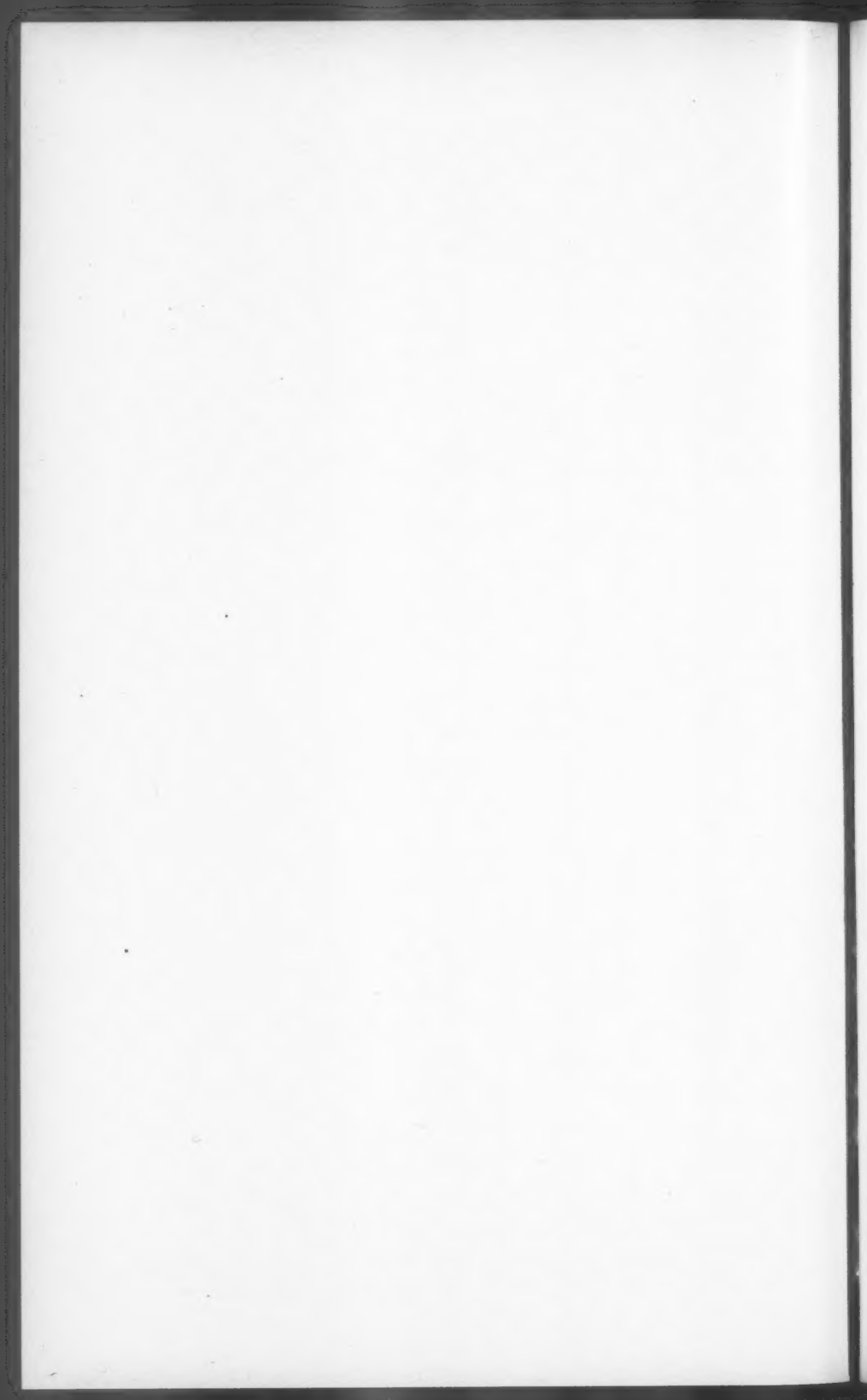
Mr. C. Leonard Woolley read a paper on the excavations at Ur (p. 315).

The Ordinary Meetings of the Society were then adjourned until Thursday, 16th October 1930.

CORRECTION

P. 238. By an error, for which I desire to apologize, it is stated that it was from the Newcastle Museum that the electrotypes of the Corbridge coins were stolen. The scene of the theft, I am informed, was the wooden building erected on the site itself.

G. F. H.



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